

‘STERRA: MANIPULATING STRATA’ – EUROSPAN 9 SELECTED PROJECT

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ABSTRACT: This paper is an account of ‘sterra: manipulating strata’, a European 9 co-winning project currently under development in a seven month workshop initiated by the City of Clermont-Ferrand, France.

The project site lies in the heart of Clermont-Ferrand, France, and is currently inhabited by the Central Children’s Hospital. The hospital will move to a new premises - our project explores how this move will have a profound psychological effect on the city, and how its absence will leave a void.

The project, ‘sterra’, seeks to shift the site from a single-function enclave to a genuine activity generator within the urban fabric. This activation is driven by an **‘inserted inhabitable platform’** which creates a **new ground** that acts to connect existing buildings, to connect a disparate city, and to create new interactive public zones. It links the city scale to the human scale at a multitude of levels and seeks to re-define the concept of a building as ground.

The **‘inserted’** programs and **‘mixity’** pull the activity of the **‘street’** into the site, integrating diverse experiences derived directly from the street level and wrapping them up into (and sometimes on) the site’s buildings. The desired result is the generation of diverse experiences and an improved quality of life within the community.

KEYWORDS: strata. inhabitable platform. landscape. mixity. european

‘STERRA: MANIPULATING STRATA’

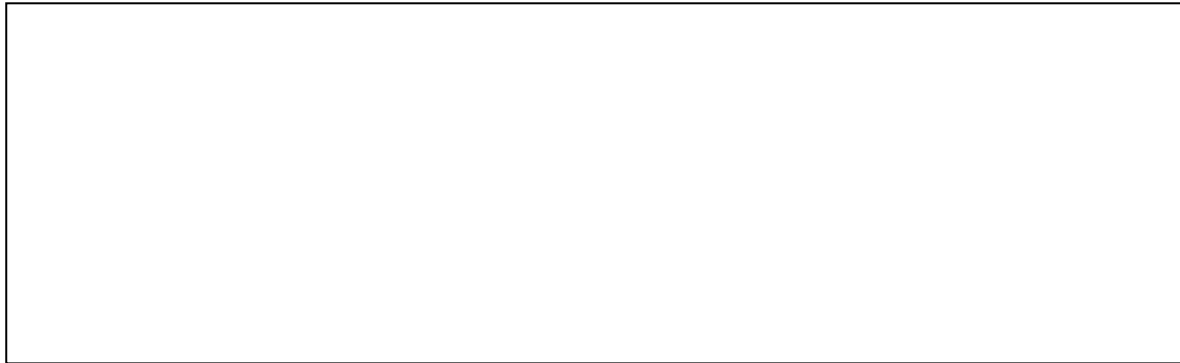


Fig. 1

Fig. 2

aerial views

The ‘sterra’ project (fig. 1,2) is a European 9 competition (2007) co-winning project currently under development in a seven month workshop initiated by the City of Clermont-Ferrand, France. The site of the ‘Hôtel Dieu’ (a children’s hospital) was listed under the topic "European urbanity, sustainable city and new public spaces". Two projects were given the runner-up prize for this site. Following the competition, a seven months workshop between the two teams, was organized by the city of Clermont-Ferrand. (October 08 – May 09) The aim of the city was to have the two teams competing and continuously developing their projects with the city having an acting role.

Listed below are the seven stages of the workshop:

- Initial presentation of the European runner up project
- Workshop on potential program / case studies presented
- Architectural development of the platform / phasing strategy/ temporariness (1st committe pilotage)
- Programmatic requirements / charts / plots definition / private – public ownership / materiality initial stage (2nd committe pilotage)
- Landscape strategy / materiality / all issues of the project brought together in a presentation to the Municipal Council(3rd committe pilotage)
- Exhibition of the workshop project
- Submittal of document showing how our project could/would be implemented

This paper, ‘sterra: manipulating strata’, presents the design approach and the work developed during the workshop phase.

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The principle landscape architect is Dermot Foley and the consultant landscape architect is Krystallia Kamvasinou.

ABOUT CLERMONT & THE COMPETITION BRIEF

Clermont-Ferrand has a population of 141,000 people and is the capital of the Auvergne region. Clermont contains more than one quarter of the inhabitants of the region and is part of an extensive urban space with almost 570,000 people, concentrated in four centres (Clermont-Ferrand, Vichy, Issoire and Thiers). It is a nucleus for industry, services, higher education and research.

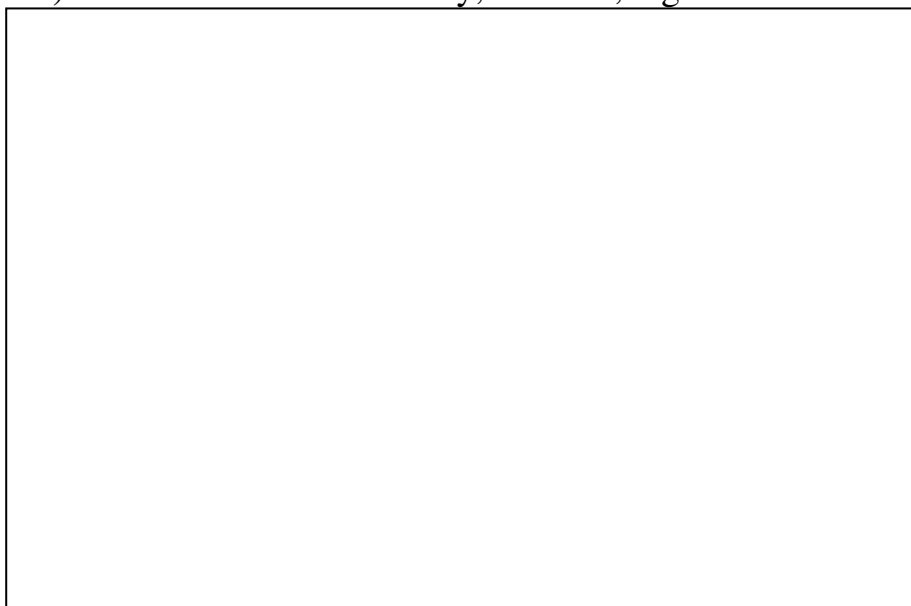


Fig. 3 city's requirements – competition brief

The study site lies within the first ring of the extended centre and is located at the edge of the central butte, which looks westward to the Auvergne volcano chain (fig.3). A large part of it, including the actual footprint of the hospital, is strongly defined by its topography, which makes it a viewing point over the volcano chain. This site is served by major structural roads and public transport services (several bus routes and the tram way) making it one of the best served sites in the town. The site is a key landmark within the urban fabric. It is located to the West of the town's oldest and most prestigious park (the 5 hectare Jardin Lecoq), directly South of the Cathedral, and to the South-East of the commercial centre (Place Jaude). The city, as stated in the brief of the competition, sees the site as a major component in its urban regeneration strategy – and believes that it is the only land in Clermont where the town can enhance and define both its appeal and reputation. A primary objective of the city as it was stated in the competition brief is “to structure a site that is accessible to non-motorised traffic and is well integrated into the town's street network”.

Four urban priorities were identified by the city in the competition brief:

- a deep concern for the environment, resulting from links between the urban and rural
- humanistic and community principles that place human beings at the heart of development
- innovation

Participants in the competition were asked to combine this quest for a synthesis between images and values of authenticity, homeland, community and innovation.

MEMORY

The project site lies in the heart of Clermont-Ferrand, spreading across 5 hectares currently inhabited by the Central Children’s Hospital (Hotel Dieu) that serves the entire Auvergne region. The hospital will move to a new location outside the city limits by the end of 2009; our project addresses how this move will have a profound psychological effect on the people of the city, and how its absence will create a dead zone in the heart of the city – which is also a prime real estate property. We want to re-insert a soul into the site by concentrating on programs and activities that address the health/healing of the public as well as the historical/natural landscape of the site.

HEALTH



Due to the fact that the site has housed a hospital facility since 1773, which is considered to be the oldest and most prestigious establishment in Clermont-Ferrand, we believe that the vocation of the site and its new program should relate to health, healing and well-being. We also feel that it is vital that our project addresses and responds to the fact that many people have faced great loss on this site. Through the continuation of the spirit of the site we decided that the health of the human body, the health of the mind, and the health of the child (fig. 4) are best preserved through placing sporting and cultural activities on the site. The ‘sterra’ project proposes to continue to concentrate on the child by taking into consideration their needs, such as play areas, accessibility, safe zones and enjoyable things to experience, see and do. The proposal seeks to create a site full of activities and energy.

We then began to explore ways of developing and investigating the concept of **mixity**. We want the site to function 24 hours a day/ 7 days a week/ 365 days a year, and for it to not only suit the needs of children but also of teenagers, working people, parents, and the elderly. It is a key

Fig. 4

factor that our project makes the site feel accessible to all different types of people from different ethnic, economic, religious and social backgrounds. The project is designed to accommodate large groups of people for different types of gatherings, and also to adhere to the scale of the human, creating more small-scale zones of comfort and safety.

URBAN CONTEXT. CITY ANALYSIS



Fig.5 flows

Fig.6 polarized cultural facilities

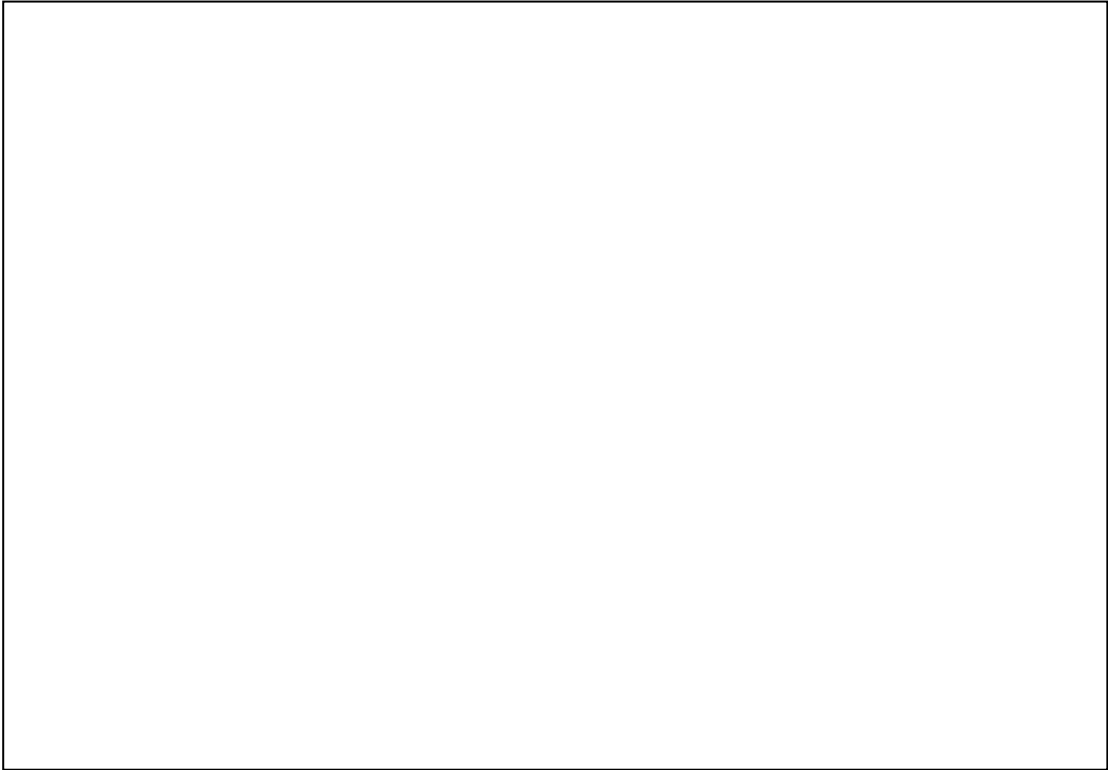


Fig.7 urban links

After exploring the urban context and conducting a detailed city analysis we noted the city itself is divided into two alienated spheres. The major cultural, educational, commercial and government facilities are polarized to the North and the South of the city with the Hotel Dieu site located in the center (fig.6). Our proposal is to create **links** (fig.7) and have our site become the missing link in the existing urban fabric. Our solution is to design a circulation cross axis that links the commercial center of the city, the Place Jaude, and the historic center of the city, the *Cathédrale Notre-Dame-de-l'Assomption de Clermont-Ferrand* to the proposed Alley of the Arts and the beautiful Lecoq Gardens.

The second issue to solve was how to link the site itself to the city. Our proposal is to create a main artery of circulation (with secondary systems and routes connected to these) while simultaneously creating a **central spine** that ties the site to the city and the heritage buildings with new program.

We also had to demonstrate how we proposed to link the existing buildings, most of them being protected heritage landmarks, with the new programmatic requirements. Our solution is that each existing building that is preserved becomes an **activator** of each proposed programmatic element be it educational, cultural, health, commerce, or residential. Thus all new built program introduced to the site will be physically linked or connected to an existing building. This provides the public with an opportunity to re-define the use of the existing buildings as the new program activates and transforms them.

REGIONAL ANALYSIS

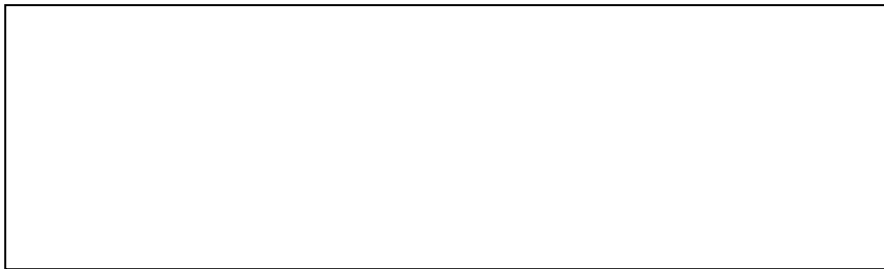


Fig. 8 volcanic stratification

After a careful regional analysis we evolved the following into the key design concepts leading our design strategies: The geography of this rare and picturesque volcanic region and its sculpted natural topographies, the stratified geologic features (fig. 8) of the area, the wide-scale use of the regional stone: Volvic (of the Trachy-andésite type) and the general investigation into **stratification**.

SITE ANALYSIS

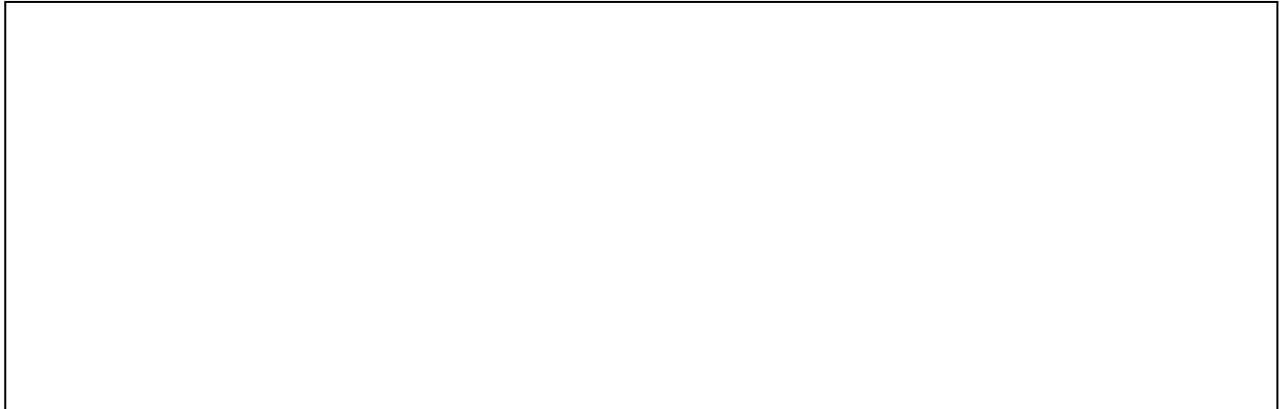


Fig. 9 Topographies of the site

The site in its existing condition is isolated. A key contributor to this isolation is the inherent nature of hospital facilities in that they are difficult to access both physically (people can't walk through easily due to crowding of cars and medical related equipment) and psychologically (it does not feel comfortable walking through a hospital site associated with pain and suffering). The inhabitants of the city are now used to this modus operandi and it will take time to change their routes through the city and change their feelings towards the site.

The 'sterra' project seeks to shift the site from a single-function enclave to a genuine activity generator within the urban fabric. Our solution in dealing with the complex situation is to respect the memory of the site and propose the following in our project proposal: carry the feeling of the natural topographies of the region into the site (fig. 9) tailoring them to be respective of the sites scale; utilize the existing extreme topographies of the site; utilize the built topography of the heritage buildings on the site (in the 1800's hospital facilities were built with a thick stone base raising them up off the ground for health and hygiene purposes. Currently visitors to the site do not walk at the level of the façade, but at the level of the base); restore the heritage buildings to their prior glory allowing them to be 'seen', thus the surroundings must be cleansed; protect and restore the historic gardens and elegant mature trees. We believe that the site must be given back to the citizens of Clermont-Ferrand but it must be refreshed and linked to the present and future needs of the citizens.

The project also explores the meaning of the word '**flow**'. Lava flows through the earth (this is a volcanic region and a key concept within the project), people flow through and on-top of the 'platform'. The flow of people, landscape and urban spaces begin to interconnect and merge with one another.

PROGRAMMATIC REQUIREMENTS

Fig. 10 programmatic mixity

The total square meters coverage of the different programmatic requirements from the city of Clermont-Ferrand are as follows:

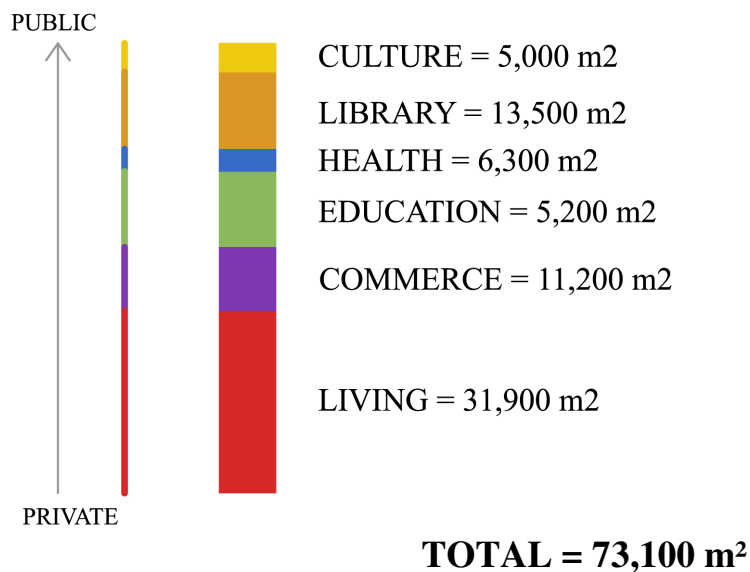
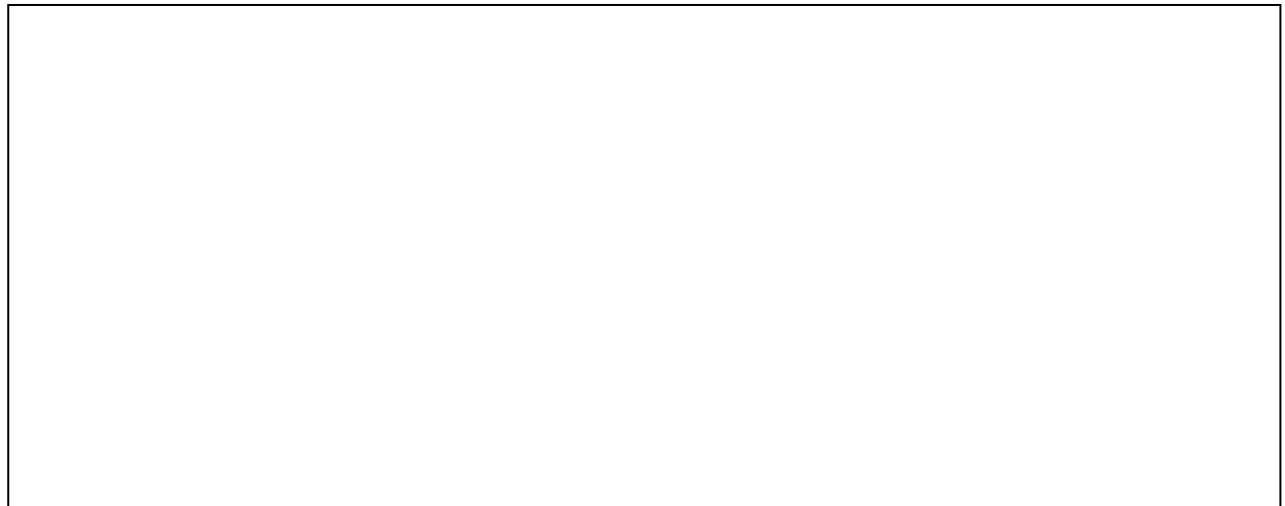


Fig.11 programmatic requirements

The programs are placed in such a way that different users and activities can be dispersed throughout the site both in plan and in section (fig. 10). It is through this layering or stratification of the function and program that our site becomes active at all times.

AN INSERTED PLATFORM

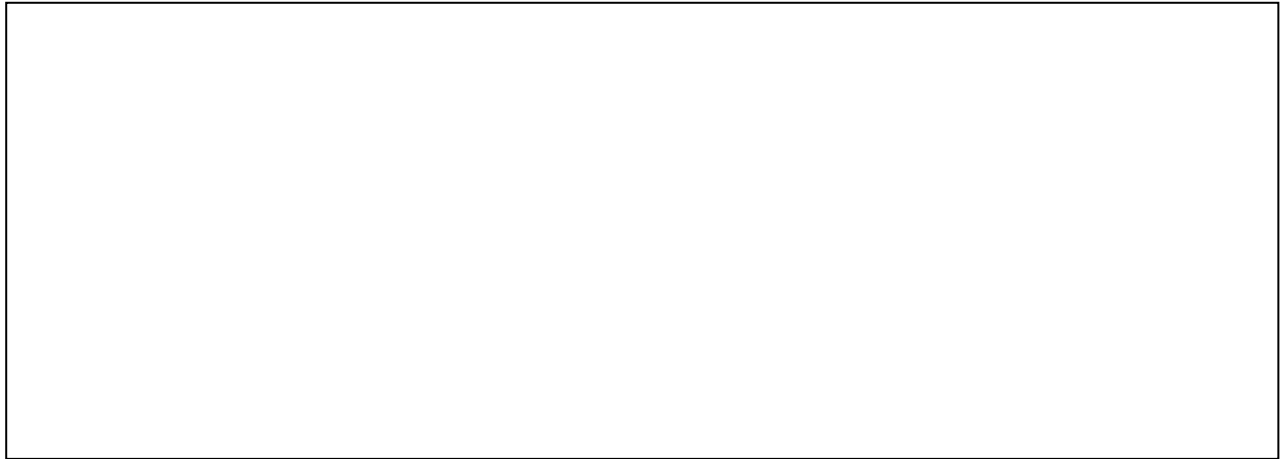


Fig.12

Fig.13

Our main concern is how to solve for the dense programmatic requirements and the diverse needs of the city but not cover the entire site with a solid mass of buildings that would block light and air, remove green space and existing trees, and mask the heritage buildings.

Our solution is to create a **platform** (fig.12,13) - that is a system of structures that fit into and work with the existing natural and built topographies of the site. This platform has program underneath or inside it, but can be walked on, and used by the public as a diverse and innovative landscape. Through the insertion of this inhabitable platform we respond to the dense programmatic requirements (that are much larger than the area of the site) while simultaneously giving back a useable and dynamic sequence of spaces to the city. The platform is broken into 3 systems: buildings, circulation structures (ramps, stairs), and surfaces.



Fig. 14 inserted platform as an activator

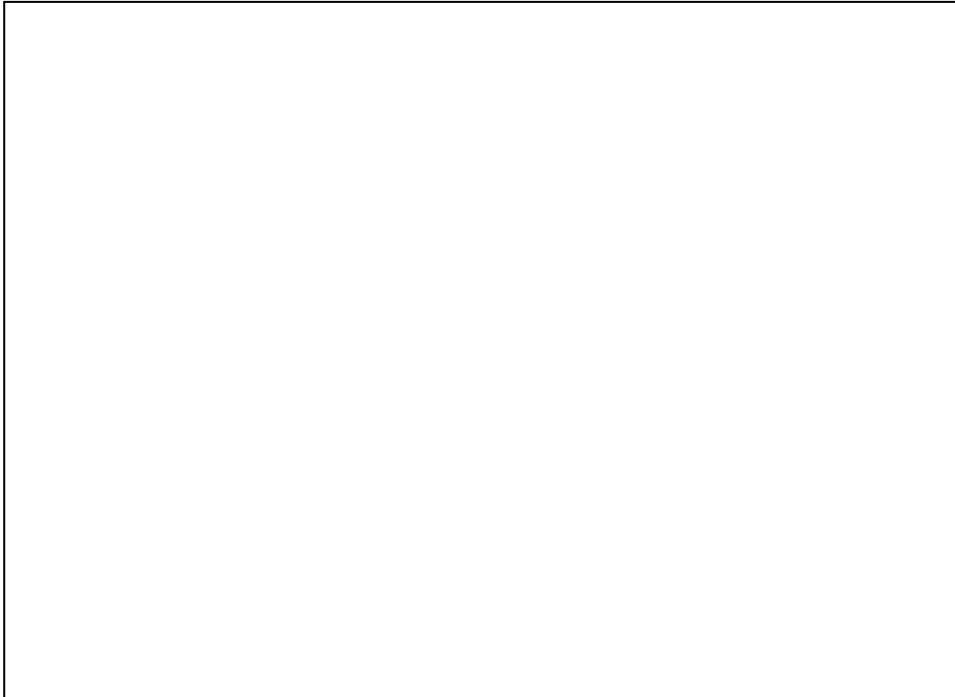


Fig.15 model photos

The creation of a **new ground** acts to connect existing buildings (fig. 14,15), to connect a disparate city, and to create spaces for soft circulation (bike paths, walking paths). It links the city scale to the human form at a multitude of levels and seeks to re-define the concept of a ‘building’; the inserted ground plane is filled with “program” and links the alienated heritage buildings remaining on the site with new structures and uses, thus creating a diverse urban, cultural and social **mixity**.

Interior, exterior, or semi-covered spaces are created within or on the periphery of the platform: shifting typical interpretations of urban territories. The **inserted platform** has circulation on top of it, buildings or program within it, and parking below it. It widens or folds up to link buildings or programs such as the two theaters (Scene National for performances and the Auditorium for music). It extends, connects and becomes; housing units, the Municipal Library, the Business School, and other municipal/commercial spaces. Due to the complex topography of the site the platform is manipulated to both touch the existing ground and to be cantilevered out from it, so that it can function as a park, a bike path, a running track, or a viewing platform for the impressive panorama of the volcanoes surrounding the city.

The ‘sterra’ project, as described thus far is realized through the combined use of two main devices: the **grid** (fig. 16) superimposed on the site after the demolition phase and; the **platform** placed on the site in successive stages. The grid is an ordering device and gives rise to a number of temporary spaces during the phased development of the site, as well as providing a mature matrix of trees in the final stages. The platform also provides a new order on the site but is

more divorced from the original ground than the grid. It offers a new network of routes through the site and a new palette of materials.

The Grid

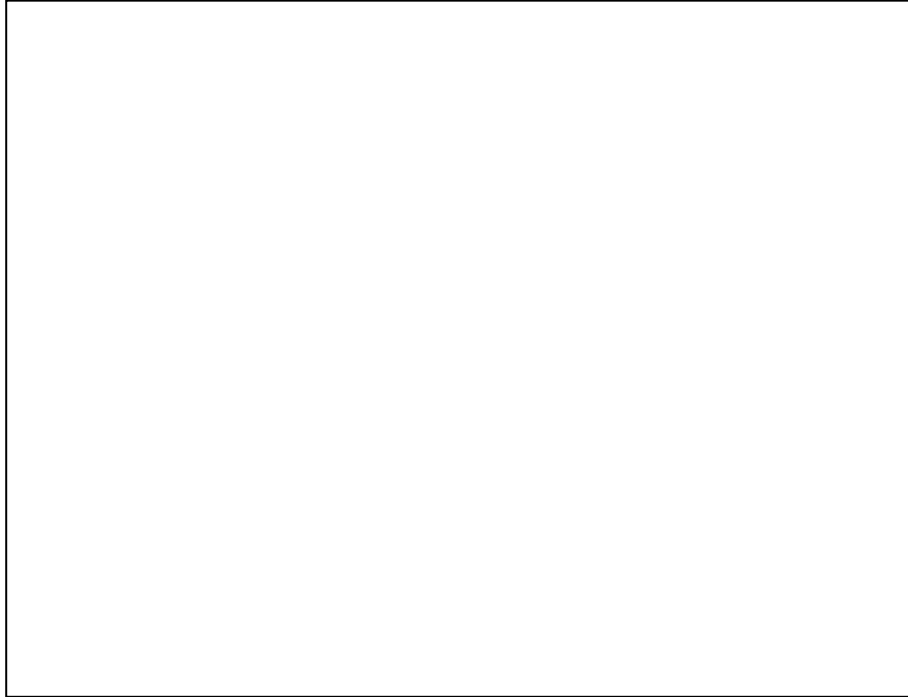


Fig. 16 grid

Each demolition site will be planted with a tight grid of trees as soon as it becomes available (fig.16). There is a clear 'movement' of built density from higher density on the eastern edge to lower density west. The landscape eventually will do the opposite. The density of the tree grid will be an indication of time and phasing: the tighter the grid, the younger the trees, and therefore the closer we are to the date the land was acquired.

A grid of *Betula alba* is proposed at 5m centered throughout the site after the demolition phases. *Betula alba* (white birch) is one of the species of the upper transitional woodland zones in the Parc Naturel Regional des Volcans d' Auvergne, and is ideally suited to planting on difficult urban sites in the context of new construction. Many of the spaces in the grid are transitional and some are temporary, meaning that a species such as *Betula alba* is conceptually appropriate for this landscape device. Where the platform is imposed on the grid, trees are removed, but some are retained as fragments of the grid and penetrate through openings in the platform. The canopy of the mature trees of the grid then rises through and above the platform.

The Platform

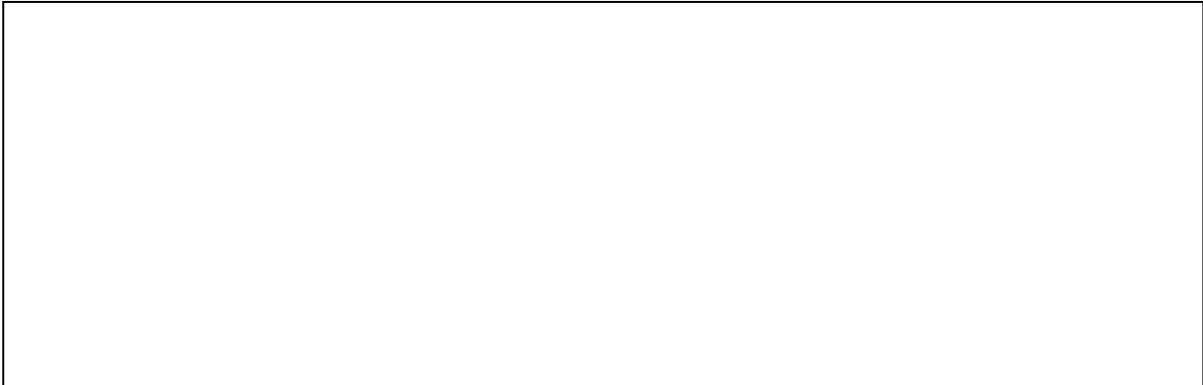


fig.17 public passages and outdoor amphitheatre

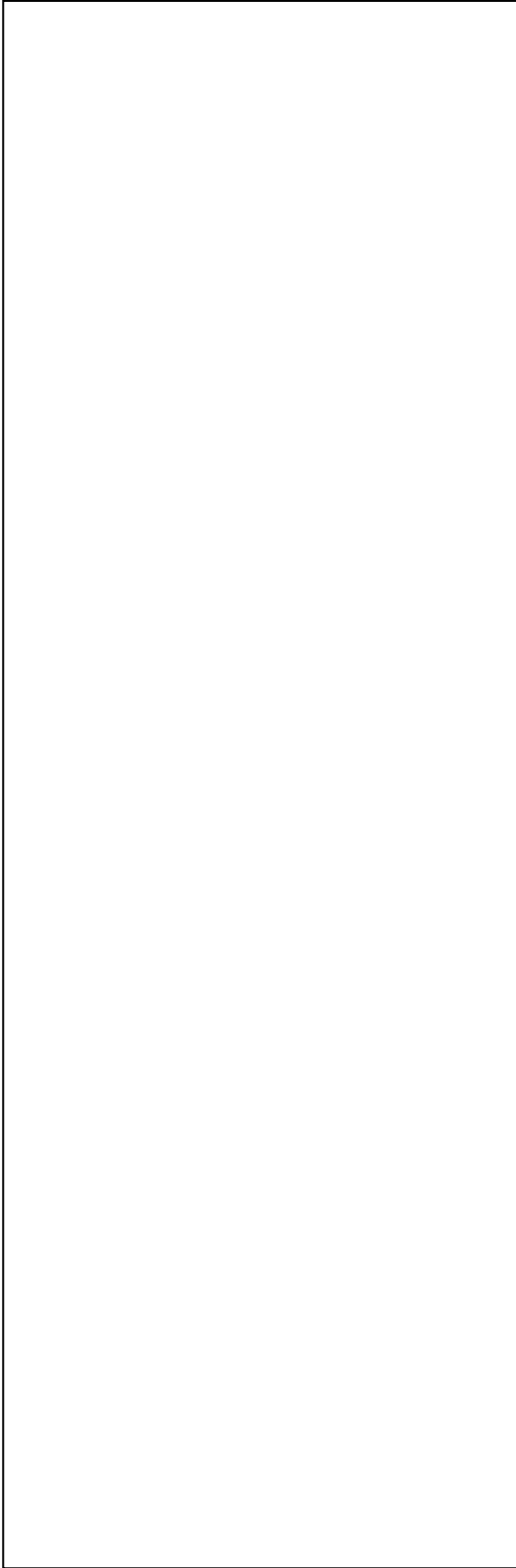
fig.18 private gardens

The platform is imposed on the site in a staged way and in response to the building and construction program. The platform is primarily public (fig.17) but portions of it which are over residential buildings are private (fig.18) for shared use by residents. The platform is a three dimensional device, rising and falling to accommodate existing and new building floor levels and tying-in to existing levels at the periphery of the site. The geometry of the platform is plastic, offering a formal counterpoint to the existing built fabric and a flexibility of movement and connection throughout. This geometry is further explored through the landscape design, using the openings for the grid trees, a new layer of detail through planted strips, paving material strips and lighting.

Merging the Grid and the Platform



Fig. 19 central courtyard



At key points in the site both grid and platform merge, so that the characteristics of both give rise to a new landscape treatment. The two main courtyards (fig.19, 23) are treated in this way because of the functional requirements of both spaces but also because of their importance within the overall hierarchy of spaces.

Materials

The grid (fig. 16, 27) includes a large proportion of soft green spaces which are strongly tied to topography and the terrain. Where the grid emerges through openings in the platform it brings this softness into the voids between buildings in the form of small courtyards and light wells.

This geometry of the platform is further explored through the use of materials. The main material of the platform is a small-format natural stone, which is visually attractive, durable and does not bring a pattern or geometry of its own. It is a flexible material and can be laid out to fill the geometry of the platform. Within this 'carpet' of stone lighting, planting and secondary strips of paving add direction, detail and diversity to the spaces. A mix of grass species compliments the birch planting and a variety of smaller trees such as flowering cherries are added in key locations to provide a seasonal commentary and a canopy appropriate to the scale of the spaces.

Apart from paving, the focus will be on textures that involve a rich sensory experience, such as water in the form of water surfaces, jets or mist; and lighting, delineating different characters of space

and connections with the city, while ensuring the place is safe at night.

A variety of surfaces from hard to soft will be the main materials of the platform. The materiality will depend on the usage of the space, fast or soft scope, pause or movement. The lighting elements could also be installed outside the boundary of the intervention area, in Parc Lecoq or Place de Jaude, providing an element of navigation that leads people to the site.

As a key point in our project, to prove that we give back landscape and useable public space to the city - we carefully analyzed the surfaces and their square meters (fig.20):

The total square meters of the site area is=52,600 m² or 5.2 ha

Our inserted platform:

Landscaped platform=23,000 m²

The landscaped topography is:

Soft green useable space=21,000 m²

The built footprint of main buildings (without the platform)

Built footprint= 14,670 m²

Private gardens (either as rooftops or ground level)

Private gardens=5,000 m²

Privately or publically owned but public use gardens:

Urban gardens=3,700 m²

Parking areas = up to 26,000 m² (all underground)

The main point of these studies is to show that whatever land area is built upon is given back to the public as useable space (either public or private). Thus even as more and more built programs are introduced into the site, the useable landscape is not diminished, nor are the green spaces removed. What we propose is a new and innovative urban condition that allows the public to adjust to the site's transitions and become involved in its development.

Functionality



Fig. 21 sectional cuts through the main circulation axis of the platform

The grid allows for a network of soft spaces for relaxation and slow pace. The platform contains a busy and exciting mix of uses including skate-park, play areas, amphitheatre, cycle lanes, water and mist features, formal courtyard treatments and access to caves (existing heritage) as well as private open space for residential users. Functions are integrated into the platform so that the functions are shared and appear to form part of an overall landscape treatment as opposed to being ‘fenced-off’ separate elements. The platform and the grid merge and diverge throughout the site. This means that a diverse range of people, young and old, can share the platform landscape but can also experience the original landscape and topography of the site through the grid.

The surfaces/spaces of the platform are engaged at varying speeds (fig. 21) (of use): fast circulation paths (for running, exercising, skating, cycling, direct pedestrian routes); medium (casual strollers, families, holiday makers); slow (using the squares to eat and drink, socializing, visiting the pools fountain, children playing, entertainment); residents/inhabitants (people who live and work on the site).

PHASING



Fig. 22 phasing and links

Due to the nature of our proposal the city wanted us to answer how our project could be realized - how this conceptual idea of an inhabitable platform could be constructed in phases without losing its identity and always ‘feel’ complete even if it had not be realized in its entirety. Therefore we were asked to provide a clear series of phasing scenarios.

Our phasing proposals are as follows (fig.22): clean the site – demolition of unnecessary buildings and unsightly hospital apparatus; restore a healthy ground scape, thus create useable public spaces and a useable landscape. Stop all parking on the ‘surface’ of the site, begin underground parking in the specified zones; begin the rehabilitation of the site - place a grid of new trees, temporary pavilions, installations, and events; begin construction of platform as city and site 'link'; parallel implementation of chosen programs. A structural

system is developed that allows the continuous surface of the platform to be broken up to smaller areas and be implemented in stages as decided by the City.

Through our implementation system we are proposing that there be a continuous conversation between the built infrastructure, the new surfaces, the landscape and the natural topography. It is vital that it is understood that the ‘sterra’ project is flexible - when ever there is a change in the needs of the City and thus the program must be changed – the project can be easily adapted to these changes. At any point that construction will cease due to economic limitations or shifts in the city’s needs – the project will look complete and the site will be useable. This is ensured through the fact that the landscape will be restored from the beginning and despite the fact that the site is under construction, it will always remain both accessible and usable.

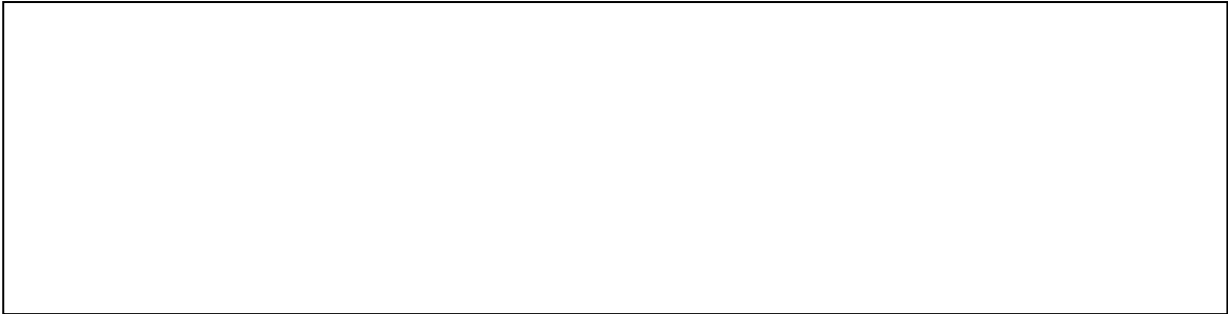


Fig.23 section-cut through the main courtyard

TEMPORARINESS & PUBLICNESS

The complexity of the site and program demands a flexible but exciting approach to the design of the landscape and public realm. A new parkland/wood (fig.16) is proposed to initially cover the site and gradually give way to new buildings and public spaces. By this, the site is given back to the city, whereas so far it had been inaccessible. The parkland/wood will support the city’s requirements in green and public space for everyday use and ephemeral events for as long as the development is in progress. This may well mean a number of years, according to the phasing of the project and other financial implications. So the temporary character of the site may be semi-permanent depending on the city’s development program. The proposal builds upon this aspect of uncertainty by substituting the built with the un-built: namely a temporary park. What is achieved with this strategy is a flexible landscape, accessible and used by all, even without the completed project in place.

Temporary events, artist installations, performances, impromptu activities, lighting installations, and pavilions with a related theme of the continuity and development of the history of the site can take place in this temporary transition phase. It is in this way the people of the city will inhabit

the site and live the changing of its usage little by little. They will become a main factor of this evolution. At the same time the site can start acting as a connector of the urban fabric without the need to be fully completed.

The first constructed piece of the platform will link the main flows through the site creating the main city cross axis route. This is the east-west axis beginning from Avenue Vercingetorix (Alley of the Arts, with a link to the Southern part of Jardin Lecoq) towards Rue Charles de Gaulle, linking to the north-south axis to Rue Lagarlaye with a bridge linking over to the Grand Pavois and connecting to Place de Jaude. The next axis would be to link the Place de la Victoire and the *Cathédrale Notre-Dame-de-l'Assomption de Clermont-Ferrand* to the axis described above. Arcades are punctured utilizing the existing colonnade of the main buildings of the Hotel Dieu – which allows this described axis to be linked through the two central courtyards that are created in the project allowing diverse cross-flows through the site.

Also important at this time is to reference the public to the caves. **Punctures** are made into the site area above the caves, to emphasize the fascinating network of underground caves, and the interesting architectural features found below the Hotel Dieu. At night these spaces will be lit up; skylights in the ground plane will give visitors spectacular views into the underground features.

DEVELOPMENT STRATEGIES

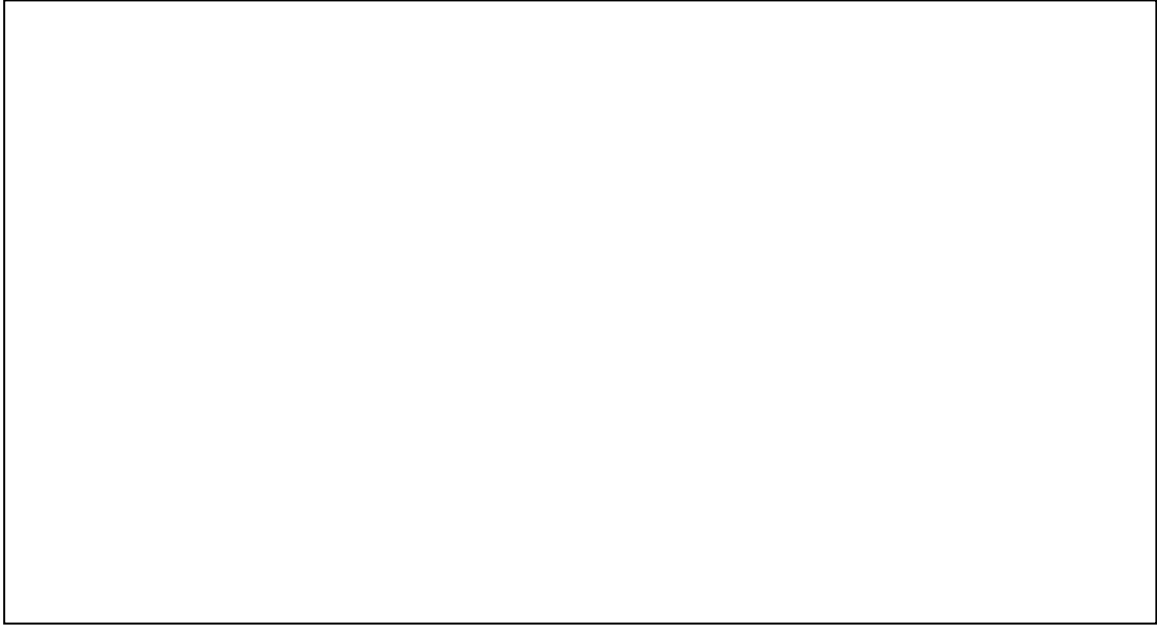


Fig. 24 plots indicated for private and public investors

The system of contraction of the platform allows the project to be broken up in smaller property plots (fig.24, 25). In this way the implementation of the overall construction will be feasible. In this time of economic change we wanted



to allow smaller developing companies to invest in the site, not just large developers, thus the site is broken down into smaller area plots. A large company could buy multiple plots, or smaller developers could be investors.

The property plots can be seen on a plan and their specific square meter and buildable density. We also began to investigate how plots could be rented by investors from the city – to balance maintenance costs and take pressure off the city for large continuous investment into the site.

Fig. 25 plots

These properties can be

defined as public and/or private. The purpose of this was to clearly prove to the city what areas could be sold, rented or remain within the public domain. In this way the maintenance of the whole site is not only a responsibility of the City but of private investors as well.

We see the future visions of the ‘sterra’ project to be adaptable and flexible so that both the City and the investors can change their minds and make decisions through the process of development – yet retain a strong identity. We offer to the City Public housing options, but also allow the City the flexibility to choose a private investor. The project is easy to manage and offers sustainable developments and techniques. The desire of the project is to reduce the number of players and investors.

SUSTAINABILITY OF THE PROJECT



Fig. 25 Soft Landscape

Fig. 26 Alley of the Arts

If this project is chosen to be developed further by the City of Clermont-Ferrand, the team will ensure that it is up to the highest environmental standards and requirements of sustainability. In this current economic and environmental crisis it is vital that an urban project of this scale be highly energy efficient and socially responsible, and that it give back to the city on a long term investment basis.

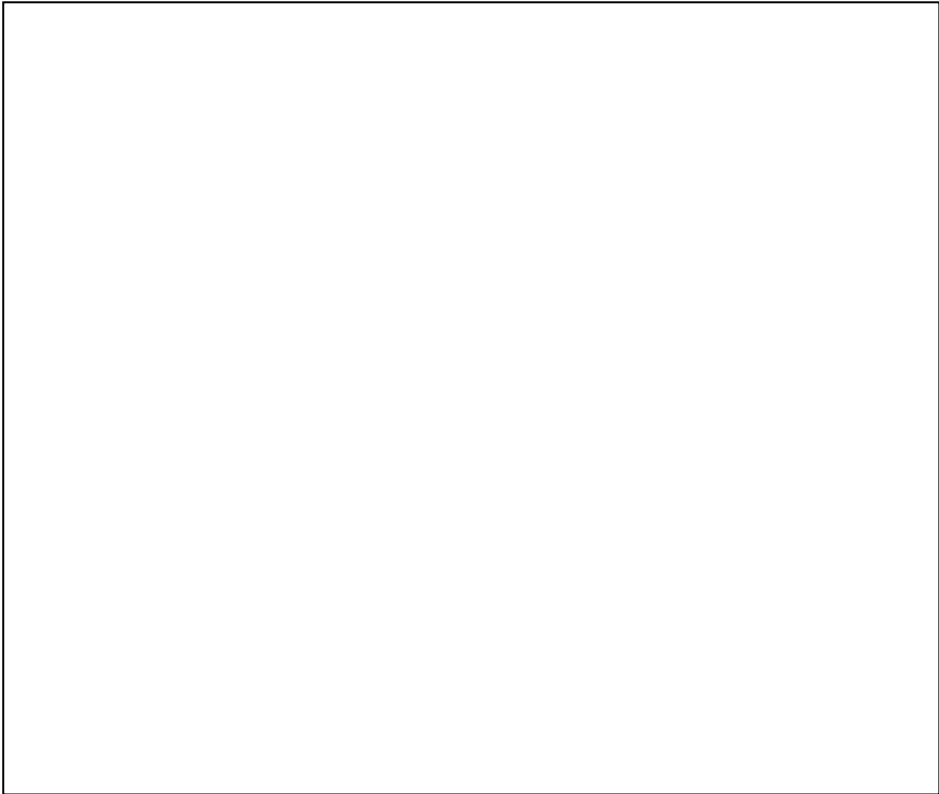


Fig. 26

Obviously these are only the initial stages of a sustainability proposal but the ‘sterra’ project does the following: all existing trees/vegetation on the site are protected and revived; all new species planted are local to the area and highly durable requiring minimum maintenance and investment; the materiality of the platform utilizes the regional stone of the area (Volvic of the Trachy-andésite type) and reconstituted wood sources for its decking; recycled materials are used for other cladding systems; all water sources utilize grey water systems and recycling pumps.

The ‘sterra’ project is designed to be sustainable and environmentally friendly in its design, construction, development and process, using current technologies for heating, cooling and energy-saving techniques. The desire is that the infrastructure of the site is as self-sufficient as possible. The planted surface of the inserted platform is also sustainable; low root trees are planted in its surface and moveable containers holding trees can also be installed. Planted areas, soft-scapes (with various local grasses), private terraces, public gardens

and shallow pools are used to help insulate the program located below them. Photovoltaic panels will be installed to produce energy for the site's users, and skylights are installed to make sure that all inhabited areas under the platform's surface receive ample natural light.

CONCLUSION



Fig.28 view to the volcano

The main goal of the 'sterra' project is to create a **new public space**; a destination for all different age groups, social groups, or interest groups. A space where the elderly can relax, a teenager can skate and an experimental group can perform. The concept is that this new public space will revitalize and at the same time connect the urban fabric of the city. It is a public space that can evolve over the years; as it is transformed from a 'topography' to an 'infrastructure landscape', and is continuously 'given back' to the user in varying ways.

'Sterra' is a flexible project that is simultaneously both financially and socially viable. It has a strong sense of identity of the region, the city and the site, yet is also able to adapt to the ever changing needs of the city of Clermont-Ferrand. The project is useable, dynamic and active – it solves for the dense programmatic requirements of the Clermont while respecting, restoring and reviving the built and the natural heritage of the Hotel Dieu.

The **inserted** programs, new public spaces, and **mixity** pull the activity of the **street** into the site, integrating diverse experiences derived directly from the street level and wrapping them up into (and sometimes on) the site's buildings. The desired result is the generation of diverse experiences and an improved quality of life within the community.