

## *Precedent Studies*

Igualada Cemetery	- <i>Enric Miralles</i>
Water Temple	- <i>Tadao Ando</i>
Double Negative	- <i>Michael Heizer</i>
Leça Swimming Pools	- <i>Álvaro Siza</i>
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## Igualada Cemetery - Enric Miralles

In "Enric Miralles: Architecture of Time", Quiros, MaKenzie and McMurray (2004:1) state that Miralles sought to establish an architecture of time and space – architecture that relates to past, present and future and is both experiential and referential at the same time. His aim was to create an architecture that is able to bring together all the different moments in time. He believed that architecture of time is composed of various different manners of experiencing layers of time. He also believed that a person collects and stores layers of time through the journey as he/she moves through time and space. Miralles (MaKenzie et al. 2004:1) believed that the journey which is architecture forms the most important part of this experience. He essentially created an architecture that was able to harness and collect the physical occurrence of time, leading to the creation of architecture as a machine of time (MaKenzie et al. 2004:1).

The Igualada Cemetery is formulated as a journey which allows the user to take part in its process, just as much as it incorporates the natural geology and topography. This is achieved by allowing the user to move inside the structure along the journey, collecting layers of time and space, as the journey becomes the architecture (MaKenzie et al. 2004:1). The long journey through the Igualada Cemetery that cuts into the Catalan landscape, exposes memories of the environment, similar to the conditions found on Yeoville Ridge. The journey exposes views and spaces that allow the user to experience the referential qualities of time and space of both past and present, and within their consciousness create a future. Thus each fragment of the journey is beautiful and meaningful.

*Time becomes a precise place where to think about a form.*  
(MaKenzie et al. 2004:1)

Just as in exploring Yeoville Ridge, the Igualada Cemetery allows the user to explore and discover new spaces along the journey, revealing time both past and present. The experiential qualities of the cemetery vary greatly with the different uses of materials, especially regarding floor finishes, wall textures, and light quality. All of these time-related elements allow the user to relate to the structure and the journey, creating calmness, seclusion and isolation. Through challenging the construct of architecture as a machine that collects time, Miralles (MaKenzie et al. 2004:1) also looked at the use of materials that are able to acknowledge the passage of time and the ruining effect of time on materials. This he achieved through the degrading of natural rock and concrete, as well as the staining of these elements due to various weather conditions, be it rain, snow or sunlight. By allowing these natural phenomena to take charge of the man-made condition on the site, he was able to re-establish the connection between architecture and time.



fig 9.1. Igualada Cemetery circulation cutting into terrace between graves.



fig 9.2. Circulation route through structure making use of interior light and shadow



fig 9.4. Entrance into Igalada Cemetery between Gabion walls that house the Graves and Circulation



fig 9.5. Circulation route making use of light and shadows.

“Integrating the living, the procession adopts a social landscape involving street like form and communal spaces; relationships such as man-architecture, architecture-site, site-landscape and thus, man-landscape are forced to refine themselves within this valley of the dead, in which the cemetery emulates the path of life and landscape of time” (MaKenzie et al. 2004:1).

The author chose this specific precedent as a theoretical model regarding the natural landscape, man-made structures and the way in which the living are brought into contact with the dead, and for the interplay of program forming route, route facilitating ritual, and ritual becoming part of the everyday. The similarities between the author’s programmatic intentions and the natural conditions of the topographic landscape in relation to that of Igalada Cemetery form a strong basis on which exploration and understanding can be based.

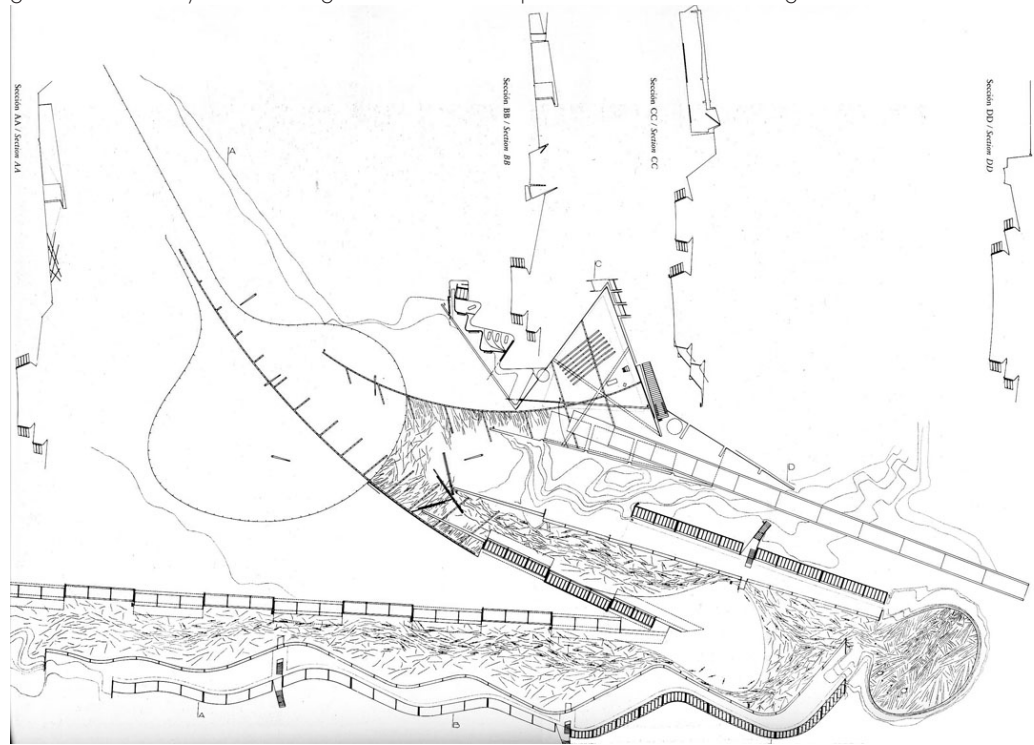


fig 9.3. Plan and sections of Igalada Cemetery showing relation between built and natural landscape. Also showing development of journey through structure

## Water Temple - Tadao Ando

The Water Temple, situated in the former city of Himpukui and designed by architect Tadao Ando between 1990 and 1991, forms part of the home of the Ninnaji Shingon, a division of the Tantric Buddhist sect in Japan. The structure, as a complete piece of architecture, contributes to the cultural and religious history of Japan and of its people. The modern temple receives criticism but also praise for representing change in the traditional architecture of temple structures in Japan (Zanchi 2002:1).

The structure itself is located in the hilly, rocky area of the northernmost part of the island of Awaji, which has been given character by Ando's Water Temple.

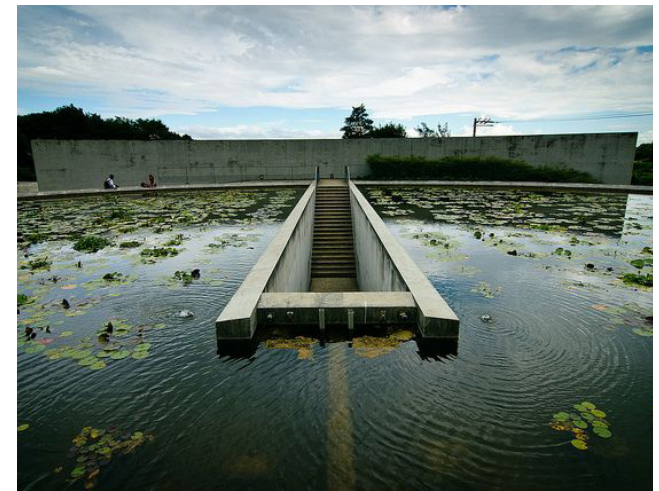
Located within a densely vegetated bamboo forest and surrounded by fields of rice and mountain ranges, one finds a lotus pond bordered by a thin oval concrete structure. The construction techniques and materials are contrary to the traditional wooden Buddhist Temples found in Japan. Instead Ando uses Western techniques and materials to create spaces that are strongly eastern in essence, such as the lotus pond which incorporates the surrounding natural elements (Anon. 2010:1). Nature plays a large role in Ando's work, even more so in his Water Temple, as wind, water and light are not merely elements to respond to within the Western framework of materials and construction, but rather form part of the experiential manifestation of the structure within the landscape and as a structure from within. The structure consists of a series of sensual geometries that create a form that challenges the traditional approach towards temples. The structure could be seen as a journey rather than a pure temple. Even after entering the chapel, the idea of an experiential journey continues until the innermost spiritual sanctum is reached. The journey to the temple is one of gradual disclosure and sudden surprise as the routes take away from and give back to the user as necessary through the use of large curved concrete walls flowing out of the landscape (Zanchi 2002:1).

As users approach the temple they are faced with a blank wall paralleled by the immense emptiness of the natural surroundings. The wall leads the user to the entrance which is placed deep within the linear wall alongside curved walls which shield the lotus pond. The user is cleansed through the process of walking on the gravel path towards immense sacredness while being exposed to distant views of the ocean and the surrounding dense landscape. This process of purification is traditionally thought of as a necessary state of mind before entering a place of sanctity. Once users are in full view of the lotus pool they are then able to distinguish between the overgrown landscape in relation to the clean, conserved lotus pool into which stairs descend to a more intimate space (Zanchi 2002:1).

Ando states (Ando 1996) that he wants his buildings to be invested with emotion in order to allow nature to enter them.



*fig 9.6. Concrete wall that exposed views of Pond and site that on plan related to the geometry of the entire project*



*fig 9.7. Circulation from concrete wall down into pond. This shows geometric relation between oval pond shape and the straight cut of the staircase.*



fig 9.8. Image showing relationship between concrete wall oval pond and staircase descending into it. It also shows the structures geometric relationship with the natural environment.

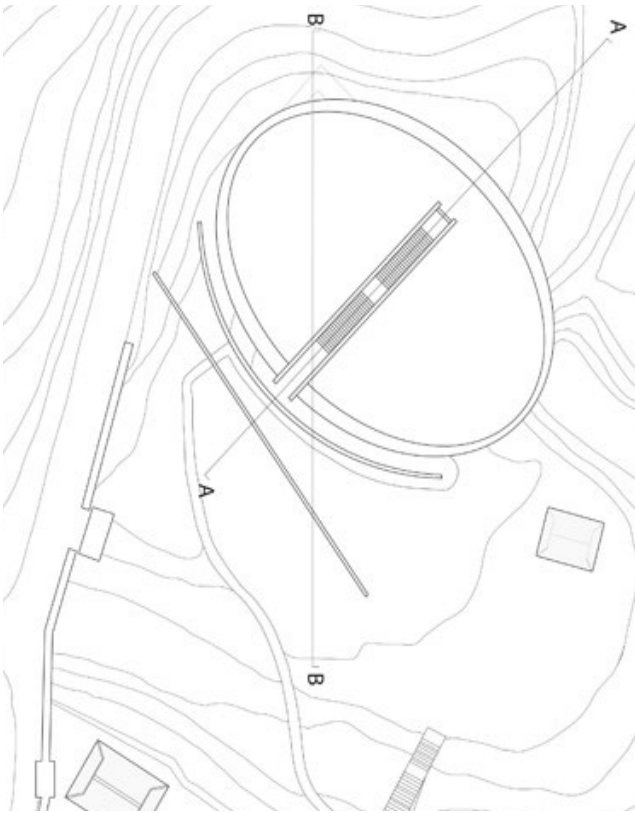


fig 9.9. Plan of Water Temple showing complete geometric composition.

Thus the sanctuary of the Temple is fully embedded within the hillside, allowing for seclusion, isolation, calmness and relaxation. The process of traversing the lotus pool and walking among the flowers over and within water allows the user to make a connection between architecture and nature. The act of walking among water and the symbolism of the lotus flowers lead to spaces of meditation and asceticism (Zanchi 2002:1).

The form of the temple is derived from geometries which seamlessly nest within one another in order to allow for a sense of harmony and balance. Even though it is far removed from the more traditional temples of Japan it still conveys a mystical power, which is the essence of Buddhist temples in Japan. Once below the lotus pond, access to the sanctuary is once again based on the principle of a route by using geometric shapes that oblige the user to gradually progress to the sanctuary, allowing for sudden glimpses along the way and finally concluding with complete access (Zanchi 2002:1).

The author chose the Water Temple as a precedent study mainly for its geometric composition, how the architect's approach to form allows for various experiential moments to manifest within the larger journey, and how, with the careful positioning of boundary walls and a distinct approach to route, the user is made more aware of the natural surroundings. This relates back to Ando's theory on the creation of a new landscape.

*Architecture should not mar the conditions of the natural landscape but should introduce a new landscape that holds the responsibility to extract and heighten the existing characteristics of the place.*  
(Ando 1996)

Furthermore, as a place of spiritual seclusion, the precedent allows the author to understand various ways in which a journey to purify the mind can aid in the creation of spiritual architecture that manifests in the creation of seclusion, isolation and calmness. Tadao Ando's Water Temple is an immensely successful building that inspires and motivates.

## Double Negative - Michael Heizer

Double Negative is one of Michael Heizer's most prominent earth art pieces and was constructed between 1969 and 1970. It was also created as one of the first pieces that formed part of a movement known as "Land Art", or "Earth Art" (Tarasen, n.d.:1).

Double Negative consists of two excavated man-made tears cut into the landscape of the eastern edge of the Mormon Mesa ridge overlooking the Nevada Desert. The two trenches are divided by a large gap formed by the natural ridge. The rock, mostly rhyolite and sandstone excavated from the trenches, was displaced into the large natural gap between them (Tarasen, n.d.:1). Conditions found on the Yeoville Ridge are similar, where the banded iron formations can be excavated to create natural passages within the landscape to make the user aware of textures created by the natural conditions of the Witwatersrand.

Double Negative blurs the lines between sculpture (art) and ordinary objects such as rocks (not art), and informs users of how earth and its natural conditions may be related back to art. The immense scale of the work also invites people to contemplate the relationship art has to the surrounding landscape in relation to its size (Tarasen, n.d.:1). In the same way, in the context of Yeoville ridge, the boundary between architecture and natural landscape can be blurred in order to use natural conditions exposed through man-made insertions to create architecture.

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In essence Double Negative consists of two large trenches cut into the landscape. These trenches cannot be seen as one as they do not connect, but are instead separated by a large open space. Thus Double Negative is more about what was taken away and is not visible anymore, with the act of removal becoming an act of creativity and creation.

Thus the act of creation was executed through extraction rather than addition – the creation of a negative within the landscape and then doubling it through a similarly open space between the two trenches (Tarasen, n.d.:1).

The author chose this specific land art piece not only because of its revolutionary status as a founding piece of land art, but also because of its geomorphological similarities to the site under investigation. It was also chosen for the manner in which it uses natural geomorphology as structure and passage for viewing the surroundings. Double Negative uses techniques such as creating the presence of space through the method of extraction, through which marks and indentations were left behind because of the excavation and blasting used to create a dialogue between nature and architecture.



*fig 9.10. View showing exposed rock. Through the extraction of natural materials space was made.*



fig 9.11. Aerial photograph of two trenches separated by excavated earth and natural expanse.

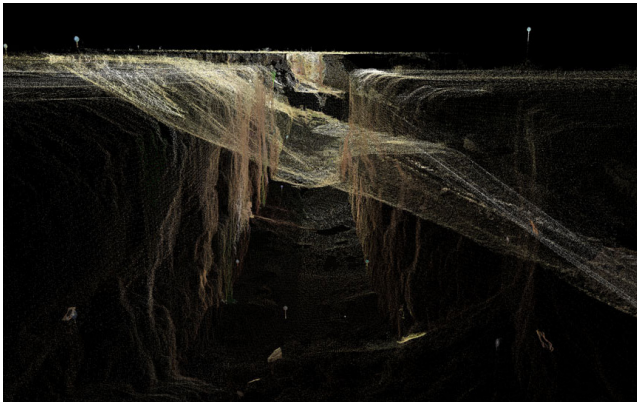


fig 9.12. Double Negative Laser Scan.

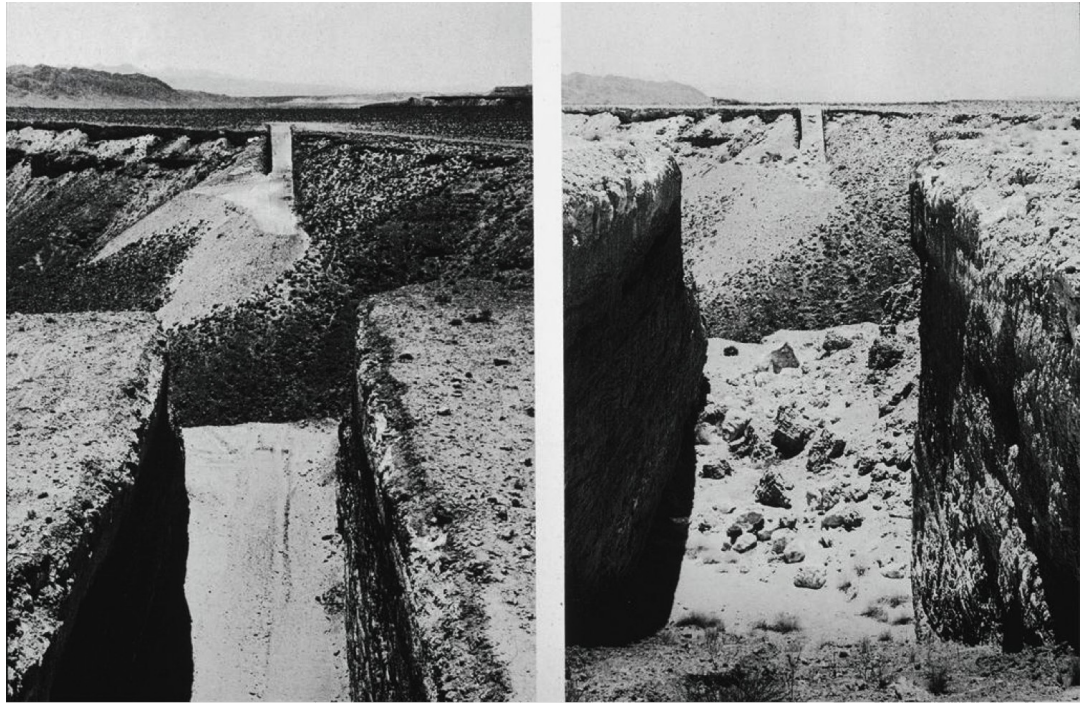


fig 9.13. Film photograph of stages of construction



fig 9.14. Image depicting weathering of natural rock.

## Leça Swimming Pools - Álvaro Siza

The Leça Swimming Pools by architect Alvaro Siza form part of one his most important works, situated on the northern coastline of Matosinhos in Portugal. The design of the pools can be seen as an example of a careful reconciliation between nature and design (McAviney 2011).

The pools consist of changing rooms, a café, and two swimming pools for adults and children respectively. The structure is positioned along the coastline parallel to the access road, sunk beneath road level to conceal it from sight. This was envisioned as a disconnect between the pools and the infrastructure of the city, allowing consideration of views for both the pool users and those on the roadway (Balters 2011:1).

Siza was careful to place the structure in such a manner that it relates sensitively to the rocks along roadway as well as for it to reach out into the ocean. This allowed for natural pool formations to develop along the coastline.

The user enters the structure down a smooth concrete ramp, which runs parallel to the existing roadway. As users move along the route between rough concrete walls, they are denied visual connection to both the roadway and the ocean towards which they are moving. Instead they are made aware of the flanking conditions through various sensory stimuli such as sound and smell. Thus the movement throughout the building becomes an experiential one (Balters 2011:1).

Users exit the changing rooms onto a series of platforms which allows for views back towards previously traversed but unseen spaces of the building. The straight walls hold out against the angst of chaos of the roadway above, while acting as barriers with a sensitive connection to the rocks along the coastline. The concrete walls are a lighter shade than the coastal rocks in order to create a visible juxtaposition between man-made and natural. This allows one, instead of misunderstanding Siza, to rather be made aware of his appreciation of the natural surroundings rather than creating imitation (Balters 2011:1).

Once users are turned back towards the ocean they are exposed and relieved to gain a view of the Atlantic Ocean, which seeps into both the adult and children's swimming pools. By intentionally blurring the ocean's edge through low concrete walls that change from meeting with coastal rock to sensitively touching the water's edge, Siza was able to allow the user to experience a sense of the vast expanse that is the ocean, and also to blur the human understanding of their man-made limits (Balters 2011:1).



fig 9.15. Images depicting various thresholds throughout journey towards the ocean. As well as relationship between natural rock and concrete cast into one another.



With the Leça Swimming Pools Siza is able to demonstrate a connection between man's understanding of nature while still maintaining the structure's integrity as a modern construction.

The author chose the Leça Swimming Pools as a precedent study because of its relationship to the man-made infrastructure of the roadway and the natural coastal edge of the Atlantic Ocean, its ability to act as a seamless mediator between infrastructure and nature, and for showing how both can coincide through sensitive architectural intervention. They were also chosen for the manner in which the architecture sensitises the user through the use of an enclosed route in order to create appreciation and a sense of anticipation by sudden glimpses of and finally exposure to the sea, for the deep understanding that the architect has of the processes that unfold while going to the beach, and for how he has managed to exemplify these processes through well-designed thresholds.

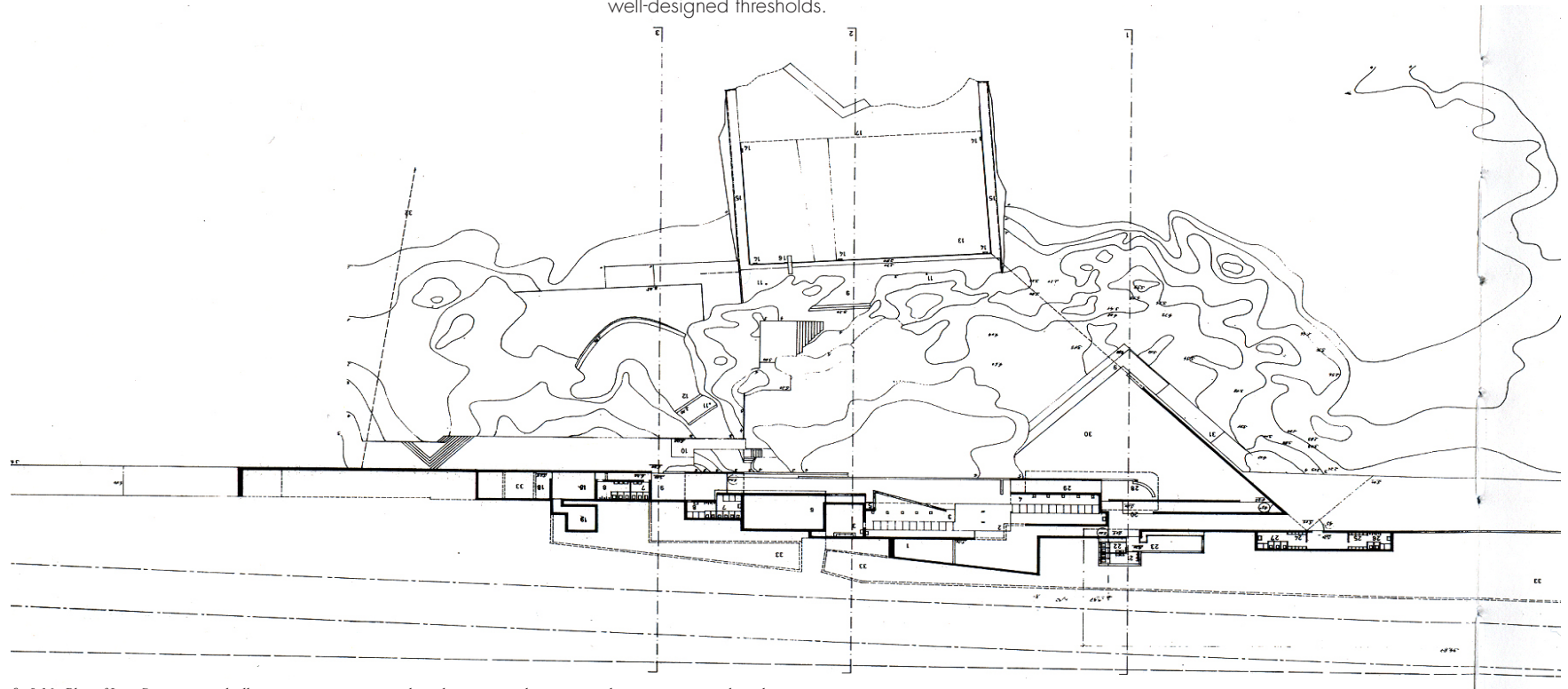


fig 9.16. Plan of Leça Swimming pools illustrating movement routes through structure and views exposed as user progresses through it.

## Woodlands Cemetery Crematorium Extension - Johan Celsing

The crematorium addition at the Woodlands Cemetery formed part of a competition with the title "A stone in the Forest". The competition was won by architect Johan Celsing and the project was completed in 2009. The competition was based on the merits of the design which responded most sensitively towards the heritage of the pine forest as well as showed empathy towards the site as a whole (Celsin 2014:1).

The crematorium is situated within a densely vegetated historic pine forest near Stockholm in Sweden.

The design itself forms part of a larger collection of buildings pre-existing on site, each with its own style, purpose and response to both nature and the process of mourning. The architect states that the initial approach for the design was ... characterised by a refined simplicity, a down-to earth feeling of form, colour and weight, with an architecture verging on the ascetic. It is quite evident that this structure also adopts a journey- or route-based approach to design. The mourner encounters various conditions while walking through the cemetery, leading into the forest of pines and ending up at a generous brick canopy which provides mourners with a space to gather and rest in close proximity to the age-old pine forest. The approach towards the crematorium is an experiential one which allows grief and consolation to converge. Thus the idea of time was explored as a long journey which unfolds and evolves as the mourner nears the structure. The structure is isolated by the natural conditions in order to create privacy and intimacy. The pathways are subdued, hesitant routes which filter through the forest in order to incorporate nature as part of the calming experience (Celsin 2014:1).

The crematorium itself has been placed within a compact formalistic shell which allows staff to take control of the processes without interfering with mourners.

An aspect of this project which is of specific importance is the manner in which the design uses materials to create robust finishes that allow for a sense of clemency to be felt by the mourner.

The author chose this precedent because of its programmatic similarities to the thesis project and to form an understanding of design surrounding the ritual of cremation.



fig 9.17. Waiting area for mourners



fig 9.18. Entrance canopy



fig 9.19. Site plan showing journey to Crematorium



fig 9.21. Aerial Photograph of Crematorium

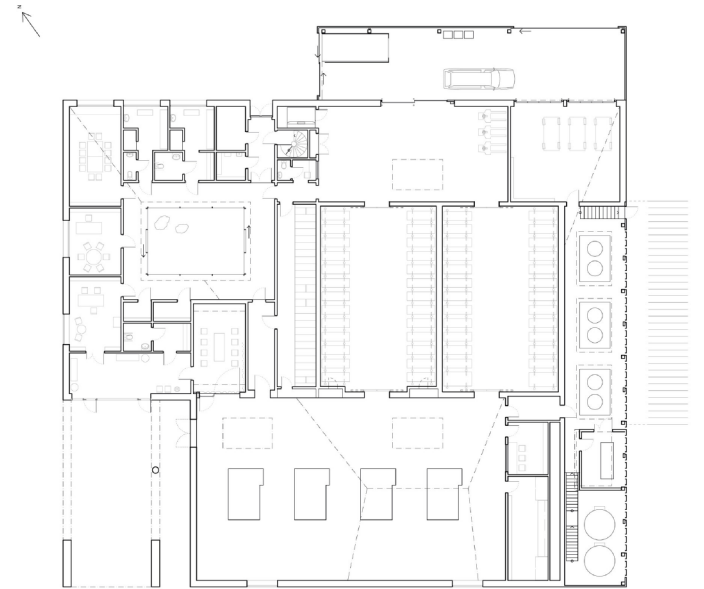


fig 9.22. Plan of Crematorium



fig 9.20. Interior use of light in Cremation room

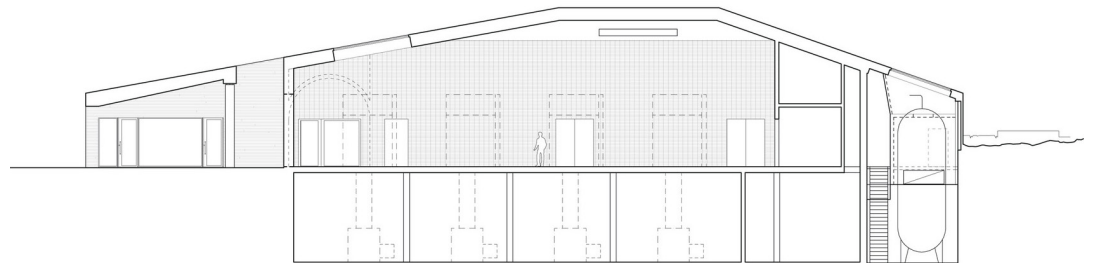


fig 9.23. Section through Cremators

Freedom Park - *GAPP Architects and Urban Designers, Mashabane Rose Architects, MMA Architects, Newtown Landscape Architects, Bagale Environmental Services, GreenInc, Gallery Momo (NBGM) Joint Venture*

Situated on Salvokop, opposite the Voortrekker Monument and bordering the city of Tshwane, is Freedom Park. The park was constructed as an integration between the landscape and the architecture. This historic landscape acts as a piece of commemorative architecture that speaks of the struggle events and icons that contributed to freedom in South Africa.

The landscape/architecture should be seen and experienced as a journey narrative. Submerged routes that lift out of the landscape tell stories of the past and make a connection between stagnant structures visible in the distance within Pretoria's urban landscape. The incisions created by Freedom Park open up historic values of the landscape by connecting the Isivivane (stone monuments), S'khumbuto (stone walls), Mveledzo (pathways), Uitspanplek (viewing platform), and Hapo (exhibition space) with one another but, more importantly, with the cultural landscape itself as a built landscape commemorating struggle and freedom.

Because of its location within the Pretoria environs the park shares a characteristic with Observatory Ridge as an isolated entity. The remote character of the park aids in its isolation and lack of everyday use. Thus the park only caters for tourists and, as commemorative architecture, fails in this regard. Its relation to the historic landscape and distance from the city forces it into a certain niche; thus over time the park could become stagnant and vulnerable to losing its relevance in contemporary society.

The quartzite ridge forms a geological foundation for the park with rich biodiversity and plant species, and becomes a beacon of freedom for the people of Pretoria. Because of the high sensitivity of the biodiversity of the site it was of great importance to take care of the site with rehabilitation and conservation. One of the concepts of the overall design was to create a landscape that takes into consideration most of the site's indigenous vegetation as well as vegetation used by traditional healers for well-being.



fig 9.25. View of Freedom Park



fig 9.24. Detail of rock connection with gutter at lowest level of roof.

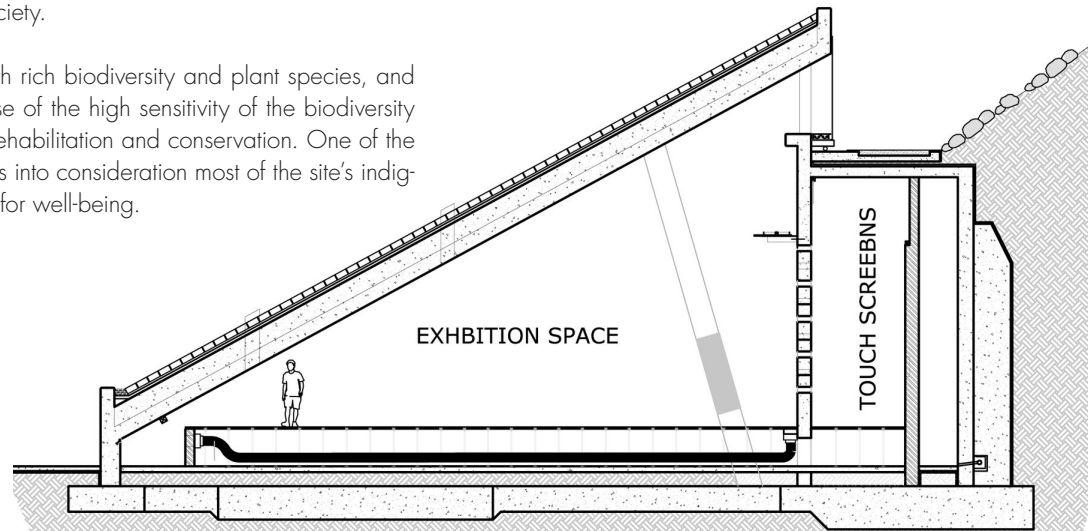


fig 9.26. Section illustrating packed rock on sloped roof.



fig 9.28. Materials found on site at Freedom park.

The author chose Freedom Park as a technical precedent for its similarities to the proposed design: the use of paths that cut into the landscape, and how the materiality is used to construct these paths to allow the user to have a more fulfilling experience of the journey through the site. It was also chosen for the continuous use of man-made and natural materials that seamlessly interact with one another throughout the site, and how they relate to various conditions such a cutting into the site as well as rising above the site in order to open up views.

The author investigated the main Gallery by visiting the site. Some design similarities of this gallery, for example various roofing conditions such as roof gardens, roof cover and approaches to waterproofing, and the use of concrete as a structural material that becomes a new landscape for natural materials and biodiversity on the site, were taken in order to create a hard-wearing building that accommodates large numbers of visitors. The author also found the continuous use of specific materials such as rock from the site, concrete, glass and timber inspirational as, throughout the journey at Freedom Park, these materials are made visible under different conditions but still remain true to their specific condition and character. In conclusion, the author found Freedom Park an extremely fitting precedent, not only on a technical level but also where design, environmental and social aspects are concerned. It is a successful project that should be more fully integrated into the everyday and not only made accessible to tourists. It should be a place where the people of the city can go.

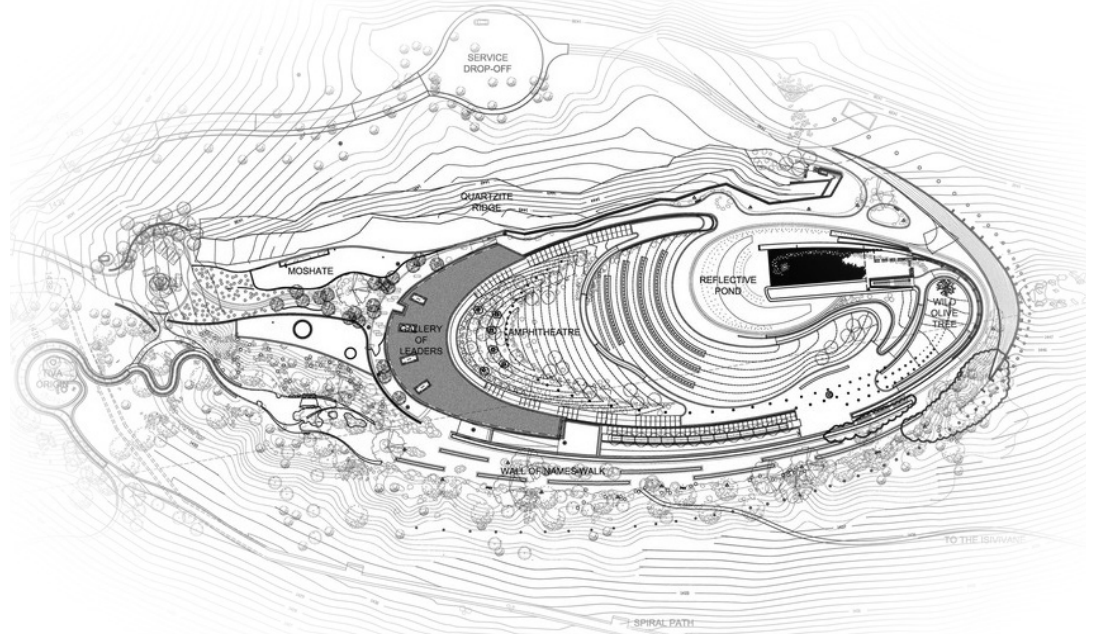


fig 9.27. Plan of Freedom Park in relation to Ridge.

