



Aisling Studios 906 Reen Rd Gidgegannup WA 6083 Tel 08 95747 197 Fax 08 95747 279
Juggernaut Holdings Pty Ltd. Trustee as Aisling Trust trading as Smith Sculptors
www.smithsculptors.com e-mail joan@smithsculptors.com
ABN - 1104 0389 967

The Sapphire Atomic Clock Tower:
a Monument to brilliance!



THE SAPPHIRE ATOMIC CLOCK TOWER

Artist's statement:

We are a husband and wife team of sculptors who have been collaborating on public artwork, internationally all our married lives. As artists, we have a particular fascination with the fundamental nature of reality and how visual perception alters this in various ways. Consequently, we have a deep and lifelong interest in quantum theory as the science underlying this, attempts to articulate similar concepts. Thus, the work of Professor Andre Luiten and his team at the Physics Department in the University of Western Australia, in developing the world's most accurate atomic clock, was the inspiration behind our design for a monument to the Sapphire Atomic Clock which we designed originally to celebrate this incredible achievement. It was to be sited in the station forecourt at Wellington Street and directly connected to the Physics Department at the UWA, thus displaying in the centre of Perth the most accurate time in the World.

Due to the evolution of the planning requirements concerning the sinking of the rail lines, and the redevelopment of the site into a new city centre to be called 'City Square', the Sapphire Atomic Clock Monument Project became surplus to the Perth Transport Authority requirements.

However this seeming negative became an exciting positive, with the potential for expanding and developing the original concept into something even more spectacular, and therefore the opportunity to relocate the Sapphire Clock Tower to the centre of the new City Square was suggested. This potential location opens up a whole new perspective on the original concept, allowing it to truly soar and become a dynamic centre-piece for not only the whole Northbridge Link project, but for Perth itself.

Given that the new location would have magnificent sightlines, particularly all the way down William Street to the Swan River, the Tower would now need to be enlarged to approximately 20 meters in height, in order to fully engage and resonate with the site.

This also allows for much more ambitious educational features to be incorporated into the design. These would be high-tech interactive elements built in to the base of the tower and developed in cooperation with the UWA. This affords the University a groundbreaking opportunity to engage directly with the general public in a truly unique way, right in the heart of the City, thereby engendering public interest, understanding, and support for science and the University. Given the woeful statistics of intake to the sciences in education, now at approximately 26%, the Sapphire Atomic Clock Monument project represents a wonderful way of projecting the real excitement of science and the part it plays in our everyday lives, in an original entertaining and colourful way to engage public interest.

Description

As previously explained, the inspiration for the design of the monument came directly from Professor Luiten and his team's incredible achievement in successfully designing and building the world's most accurate atomic clock. The sapphire crystal at the 'pulsating heart' of the clock, became the visual inspiration and expression of the artistic process. Thus the Sapphire Clock Tower would be sheathed in glass, becoming visually, a giant 20 meter high crystal, soaring upwards from the Nexus 'node' of City Square. The glass itself, would be digitally embedded with an intense

full-colour visual graphic of an almost holographic crystalline motif. Triangular in plan, the Tower will carry three huge full colour, television quality L. E. D. screens, each approximately 4 meters wide by 1.5 m high. The potential of these huge screens to carry images and information, apart from the most accurate time on the planet, connected by landline to the UWA, is limitless.

This breath -taking crystal tower will soar upwards, from a stainless steel base, also formed to represent crystalline structures. The S.S. Base would also act as a physical barrier to vandalism. This base feature would be approximately 5 meters high and inclined outwards towards the top, to prevent climbing. The entire effect would be of an enormous, beautiful, elegant sapphire crystal, visually bursting upwards through the floor of City Square: a stunning visual metaphor for the actual device quietly pulsating away in the Physics Laboratory at the University of Western Australia, at 10 billion times per second. While functioning perfectly at all levels visually, during daylight hours, it follows that the Sapphire Atomic Clock Monument really comes alive at night. The entire glass structure will be lit internally with full-colour, programmable LED lighting. A powerful laser will pierce the night sky from its apex, while below, a complex sound and light animated sequence, will ripple down the tower, on the hour, and flow out into a complex array of light channels built into the surrounding paving. Thus, potentially, the entire Square could become a marvelous display of pulsating light, seeming to emanate from the tower itself. This opens up all sorts of design and educational opportunities which we are exploring at present.

We believe that the final, and most exciting development of all, is the almost certain fact that the University of Western Australia's Sapphire Atomic Clock will become the beating heart of the Square Kilometer Array Astronomy project, at present being evaluated by an international body, to be built in Western Australia. This is one of the largest scientific projects currently being undertaken by the human race. At a cost of \$1.5 billion it will give mankind the possibility of not only seeing Earth -like planets around other stars but even analysing their atmospheres as well. In this way, the potential future discovery of alien life outside the Earth becomes a real possibility, with Western Australia being the centre of this enormous international effort and the Sapphire Atomic Clock being the heart. The SKA project is only one of the exciting potential projects involving this amazing instrument in the U. W. A. There are many equally important local and international science programmes being considered for it as well.

The importance of all the above would bypass the general public unless we make a creative effort to fully engage and ultimately inform them of this world-class scientific programme being carried out in their midst. The scale and importance of the work and its potential impact on everyday life, needs to be communicated in a highly visual and even entertaining manner. The Sapphire Atomic Clock Monument project has huge potential to reach out to the average person in the street, particularly children, and draw them into and involve them in what will surely become one of the most thrilling enterprises yet undertaken by the human race: the real possibility of discovering life on another world.

The University of Western Australia's Sapphire Atomic Clock looks set to become the key to this incredible international effort.

Joan Walsh Smith and Charles Smith - May 2010 - www.smithsculptors.com

