

POLITECNICO DI TORINO
SECOND SCHOOL OF ARCHITECTURE
Master of Science in Sustainable Architecture
Honors theses

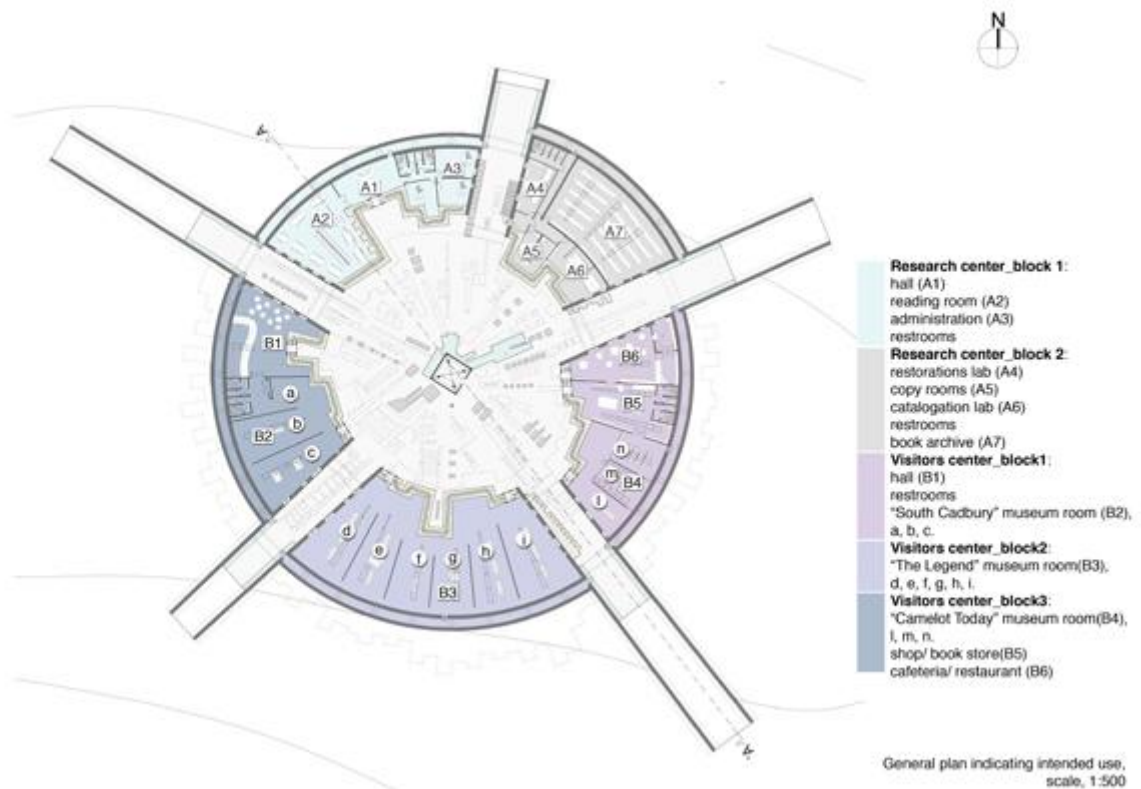
Camelot research and visitors_center

by Carola Perelli

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This thesis derives from a design contest for students edit from Archmedium (www.en.archmedium.com). This asked for a project of a building use as museum and research center, situated in South Cadbury (GB). Museum expected from the contest tells the history of the area. It is thought, in fact, that the castle of the mythical King Arthur rose on the hill of South Cadbury, hypothesis nearly confirmed by archaeological excavations developed in the 1966.



General plan indicating intended use

The legend of King Arthur consists of minimum three hypotheses: the first idea is that he doesn't really exist, the second that has existed, but that we don't know yet who he is, third idea is that Arthur is a composite figure, formed by historical and legendary characters.

The idea of project, developed in my thesis, derives from the image of the sword in the stone. It means to transform in architecture the void left by the sword extracted by Arthur. This metaphor became architectural form through a breaking in the ground, which allow me to glimpse museum volumes and open spaces, both buried ones. Parallely I refer to a modern work of art, that it could be adapt to define the morphology of the architectural complex. It was found in the bronzy sculpture entitled *Grande Disco*, of Arnaldo Pomodoro, created in 1972 and now visible in Meda Place, Milan. The irregular elements in the centre of the projects are transformed in suspended metal profiles or stone seats, so as to remember ancient abandoned ruins. The stone is also used in the project as evocative material of traditional constructions and castles.

The buried complex, on an only level (for a total of around 2100 m²), is reached through ramps with 8% inclination. In the central part the is a glass panoramic elevator, which present hydraulic propulsion from below. This technology allows it to be invisible if lowered. Glass facades, towards the inner square, presents a double skin technology inside which climbing plants support rise. The purpose of this "space pad" is to create an interspace that separates internal to external spaces; this can also became a natural screening system during summer period.

The desire to have maximum compositional freedom in project has brought me to create a free pillars structure. I got this result connecting together the different block's structures, transforming action of the structure as a great dome. I calculated efforts and necessary thickness with the software LUSAS®.

The demands of project from a technological point of view were mainly two: the use of natural and recyclable materials, and good thermal insulation. The first one was reached mainly using wood, stone and insulators gotten by recycle of refusal as glass and plastic; the second one avoiding to put directly in contact internal and external spaces. Another objective was to use renewable sources of energy without aesthetically burdening on the project, or on natural landscape. The solution was to integrate the photovoltaic and solar panels in the building through two different technologies: the Onyx Solar® photovoltaic and solar floor, and the photovoltaic glass. In projects, two different kind of practicable coverages were studies: green roof in the north of the building, and photovoltaic and solar roof in the south. Spaces are strategically orientated; research center is south facing to guarantee ample solar contributions, while research center is facing north to avoid direct illuminations, filtered instead by photovoltaic glasses, transparent only for 10%.



Project in natural environment



Axonometric section

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