The Philosophy of the Science City

The design of science city will create a set of buildings and spaces that must be inspiring on the outside and motivating and exciting on the inside to visitors and employees alike. It must express a particular vision of the search for knowledge and the pursuit of science.

Humans interact with one another and with nature. They explore the limitless universe and the inner self and the subtlety and complexity of these explorations and social relations form the web of life. Such explorations result in expressions that we have come to call Art or Science. But exploration is at the root of being human from our youngest years to the winter of our lives.

Science is driven by curiosity about the natural world and the inner self. It is empirical, rational and logical. It is about the joy of discovery and the delight of understanding.

Technology is the utilitarian application of Science. It may precede science, as it did when people used tools and levers without understanding the scientific principles that underlie them. More recently, technological development kept pace with scientific research. "Research and Development" or R&D, has engineered progress throughout the 20th century.

The Science City celebrates scientific enterprise with its exhilarating and unending journey of discovery, and promotes the "Culture of Science". It is a place where we honor the past, celebrate the present and invent the future. It helps our greater society, as well as its national and foreign visitors, gain insights into and an appreciation of scientific culture, which is more than a widespread knowledge of scientific facts and figures. Scientific culture embraces the acquisition of a sceptical outlook and promotes evidence-based regulation of human social activities and interactions. A society whose culture is permeated by a culture of science is one whose public discourse honours the search for truth, recognizes the contributions of others, remains open to opposing points of view, celebrates rationality and adheres to logic and proof.

The scientific method is central to the enterprise of science. Without it there can be no real R&D, no technology. It is a necessity, not a luxury. Younger generations must become producers of knowledge, not just consumers of technology. Those who do not tolerate opposing views will not be able to enjoy the enormous benefits of science and technology. We must allow the scientists of tomorrow to make their contributions to a better future for all.

In thinking about how to design the buildings that will constitute "Science City" competitors should reflect on the evolving nature of science. The classical definitions of natural sciences include the following:

- **Physical Sciences: Physics and Chemistry;**

- **Life Sciences: Biology (Zoology and Botany);**

- **Earth Sciences: Geology, Observation and Meteorology**

These classical definitions that functioned separately for a good part of the last two centuries have been challenged in the last half century. Increasingly, discoveries have resulted in overlapping scientific domains: Biochemistry, Palaeontology and Molecular Genetics, to name but a few. Today we are witnessing another enormous convergence of the domains of bio-info-nano-technologies, prompting exploration and experimentation between these hitherto separate fields.

Furthermore, we rely increasingly on process and system views, rather than isolated events or "snapshots". Take, for example, photosynthesis. It is now seen as drawing on the different scientific disciplines in different ways. Thus:

- **Light: the energy source (physics)**

- **Photosynthesis: the food production process (chemistry)**

- **For plants (biology)**

Energy, biochemical pathways, cell Biology and plant physiology all contribute to enhance our understanding of nature. Furthermore, we are moving from creating collections of data (or specimens) to creating connections between separate collections of data or specimens.

The domains have blurred: we see mathematics as the basis of music. We study the brain to understand the mind. Neurology and psychiatry are seen to be different ways of looking at that most fundamental part of ourselves: our brain. Computational linguistics and literary criticism seek greater understanding of language, its uses and the messages that it carries.

Even as we write or read these lines, new technologies for presentation and communication are being developed. The pace of change is rapid. Thus the Science City must be built in stages in order to allow it the flexibility to absorb changes in museology or exhibition format, to update

interactive learning facilities, and to remain open to new possibilities from building to building during the execution of the campus.

The Proposed Development

The Bibliotheca Alexandrina is launching an international competition for architects and planners to design the Science City (SC). The project aims to foster scientific culture and knowledge to the public. Through its architecture and programs, the Science City will connect past achievements with present advancement, while guiding future development.

Egypt has been a world leader in scientific achievements. At the dawn of civilization, Egypt laid the foundation of scientific knowledge and scientific thinking. Scholarship and literacy, a system of writing, classification and practical knowledge were at the heart of remarkable Egyptian achievements in all fields of knowledge. Early Egyptians observed the stars and contributed to the development of astronomy, thus ultimately paving the way for the exploration of outer space. They used their knowledge of the stars to navigate and explore the seas preceding future ages of exploration. Their knowledge of chemistry, medicine, geology, mining, metallurgy, plants, animals, and architecture was essential for later achievements. Above all, it is their contributions to mathematics and geometry that provided the basis for later advances in the physical sciences.

The Vision

Our vision is to establish a national central institute with international standards that can illuminate the world of scientific knowledge and technology. The SC will be comprehensive in its content, demonstrating unity among the sciences. The SC will not only be connected to educational and cultural facilities within the 6th of October City, but also to other local, national, regional and worldwide organizations facilities. These include universities, educational facilities, scientific research centres, libraries, and media production centers. This connection to major scientific and research centers worldwide will enable the SC to simultaneously act as an eye and a vehicle, linking our society to the latest achievements in the fields of science and technology.

The Objectives

The main strategic objectives of the SC are:

- Disseminate scientific knowledge and scientific thinking among the general public.

- Promote science for development

- Support science education and research

Science City should address various aspects in society by ensuring that science-related projects and findings are presented to the public in an exciting and entertaining manner, with thoughtful simplification that conveys the key principles of scientific investigations as well as their importance for human welfare and development.

It is vital to promote science for development. The demands for scientific research in a developing country must be driven by a desire to contribute to the creation of jobs, to put scientific ideas to use, and to utilize local human and natural resources for the maximum economic benefit without sacrificing environmental safety and social well-being.

The potential to explore where Egypt can make an impact and increase its export of scientific goods is one of the main objectives of the Science City. By helping in creating the proper climate for inventors and by fostering the spirit of discovery, and emphasizing the importance of curiosity-driven research, the public and students will be able to venture into new areas that can directly benefit society.

In this context, a comprehensive master plan and conceptual design competition was a better response to our needs, than a detailed project competition, which would bind participants to a specific project with detailed requirements, such as the number of rooms in each facility and the approximate size and intended use of each room.