Neural Architecture as an Inspiration for Designing the Internal Spaces of Technological Incubators

Dr. Omnia Magdy Abdelaziz Mohamed
Lecturer – Department of Interior Design and Furniture - Faculty of Applied Arts – Banha University
omnia.abozaid@fapa.bu.edu.eg

Abstract:

Within the framework of The national strategy for Science, Technology and Innovation 2030; the "Information Technology Industry Development Agency" has launched a "Technology Incubation program" to act as the largest umbrella under which technological incubators are developed and managed, inside the "Technology Innovation and Entrepreneurship system". So that it covers all Egyptian regions, and to be able to transform ideas into startup companies that can compete on both economic and technological levels; and provide competitive products, to achieve the objective of knowledge economy, create new job opportunities and participate in meeting national challenges by discovering new ideas and embrace their developers; researchers, entrepreneurs or students at Egyptian universities and schools.

As culture and technology progress, designing buildings has changed; both externally and internally; and life inside cement walls has become displeasing. This caught the attention of architects and internal designers, so now they take into consideration the buildings interiors and exteriors, to facilitate life for their inhabitants; as well as support their comfort, joy, with the objective of enhancing productivity and life quality. Therefore, the concept of this research was developed to realize the output of neural architecture in promoting the role of the interior designer in the enhancement of technological incubators internal environments, to improve economic development and participate in changing the world.

The research reached to achieve an internal environment based on the neuroarchitecture fundamentals can improve the behavior and health of the building inhabitants, giving rise to efficiency and continuity of economic development and creativity.

Keywords:

Neural Architecture, Technological Incubators, Environment.

Research introduction:

The progress of societies depends on caring for their children, arming them with science and knowledge, and preparing a suitable environment for them to invest their energies in order to achieve their goals and the goals of their society. Accordingly, universities seek to meet their needs for specialized cadres in all fields to contribute to the process of developing the scientific research movement and enhancing its capabilities in facing many problems that impede the development the society. (Mohamed and Mahmoud 2020)

Dr. Hala Al-Said, Minister of Planning and Economic Development, during her participation in the activities of the 29th annual scientific conference of Egyptian economists held by the Egyptian Association for Political Economy and Legislation, indicated that investing in

technology and science and encouraging innovators is no longer an option that can be postponed, but has become a necessity imposed by the economic and social development challenges. , which is taking place in various countries of the world, especially with the increasing calls for the need to keep pace with what is known as the fourth industrial revolution and what it includes of the trend towards the intensive use of technology and advanced mechanization in manufacturing processes, in addition to the spread of artificial intelligence, which contributes to the creation of many opportunities and challenges, perhaps the most prominent of which lies in The continuous change in production and the relative importance of the factors of production and the increasing possibilities of the disappearance and emergence of new types of jobs. And within the framework of the government's action program to deepen technological development, the government has worked to increase the number of technology incubators to reach 13 by the end of 2021/2022. https://alborsaanews.com/2020/02/09/1294089 Accordingly, the National Program for Technology Incubators is the largest umbrella for the establishment and management of technological incubators in the entrepreneurship and innovation system to cover the various regions of Egypt, and to be able to transform ideas, innovations and research outputs into emerging technological companies capable of economic and technological competition and their products with a competitive ability to achieve the goal of the knowledge economy. And creating new job opportunities and contributing to facing national challenges, through which new ideas are explored and embraced by researchers, innovators, entrepreneurs and students in Egyptian universities and technical schools, and the provision of the appropriate environment and financial, technical and logistical support for technological ideas until they reach emerging technology companies.

With the progress of civilization and technology, the design of buildings differed externally and internally, and life turned into walls of cement devoid of pleasure, which drew the attention of architects and interior designers who cared about buildings internally and externally to facilitate life and took into account the comfort, pleasure, luxury and health of the occupants of the buildings in order to increase productivity and improve the quality of life. And reduce stress and anxiety and in terms of improving the environment of technological incubators came the idea of research that illustrates the impact of neural architecture in enhancing the role of the interior designer in improving the internal environment of technological incubators to promote economic development and its contribution to changing the world around us

Research background:
The level of researchers, innovators, students in Egyptian universities, and entrepreneurs is affected by the internal environment and the external environment of technological incubators, which we must take care of in order to take advantage of the available energies, discover new ideas, and adopt their design in support of economic development.
Research problem:
1- The apparent lack of use of the principles of neural architecture and its role in interior design to create an environment for technology incubators.

Search goal:
1- Enhancing the role of neural architecture and its design feedback in creating internal spaces for technological incubators that help maintain the psychological health of the user.

Research methodology: an analytical and applied descriptive approach.

Search questions:

What is the impact of the architectural space and the internal and external spaces of technological incubators on people from the cognitive, emotional and social aspects?

By designing tech incubators with neuroarchitecture principles, can stress be reduced and the well-being of tech incubators occupants be reduced?

Are technology incubators influenced by neural architecture designs?

Spatial research limits: Creativity Development Center project in Bein Al-Sarayat area - affiliated to Cairo University in Giza Governorate - the project is under implementation

Results:

From the above, we can draw some conclusions:

Designing and planning technological incubators with the principles of neural architecture creates spaces that help improve the psychological health of the user and lead to raising the level of productivity.

Neural architecture helps create an internal environment that focuses on the brain functioning of those who occupy it.

Connecting neuroscience with the interior space of incubator spaces contributes directly to technological progress and creative thinking.

Recommendations:

1. Educating the Egyptian interior designer about the role of neural architecture in creating the internal environment for technological incubators to enhance creative thinking and improve productivity.

2. Ensuring the application of the principles of neural architecture in the field of interior design of technology incubators more to provide a new methodology for the Egyptian interior designer.

3. The need for the Egyptian interior designer to pay attention to the principles of neural architecture, to understand how to modify the environment according to the chemistry of the brain, to rethink all tasks, and to present designs with deductive foundations from neural architecture.

References:

husayn faraj alshitiui-dur alhadinat altiknulujiat fi tahqiq aiqtisad almaerifat min khilal tahwil alafikar alabdaeiat alaa tharwata- almltqy alerby hwl: tezyz dur alhadnat alsnaeyt waltknwlwjyt fy altnmyt almustadamat -2015

sana' eabaas satie -shmayil muhamad wajih -dawr aleimarat mutaeadidat alaistijabat alhisiyat fi takwin alsuwrat aldhihniat almumayazat fi alfada'at aldaakhiliati-bhath manshur -almajalat aleiraqiat lilhandasat almiemariat waltakhtiti- 2018

salah eabdallah muhamad hasan- 'amal ealaa mahmud- mutatamibat tafeil dawr alhadinat altiknulujiat litatwir albahth altarbawaa- dirasat maydaniat fi jamieat 'asyuta-bhath manshur majalat kuliyat altarbiat jamieat bani suayf -eadad yuliu aljuz' althaalith 2

tariq almisri- waqie hadinat al'aemal altiknuluijyt walhadayiq aleilmiyt wa'athar 'iinshayiha fi taeziyz alrayadat watahaqiyq altanmiyt almustadamat fi muasasat altaelym alealia-bhath manshur -mutat lilbuhuth waldirasati, silsilat aleulum al'iinsaniyt walaijtimaeiyti,

-٥Maha Mahmoud Ibrahim-The Integration of Interior Design and Neuroscience: Towards a Methodology to Apply Neuroscience in Interior Spaces-Architecture and Arts Magazine - 14th Issue 2019

-٦Betsey Olenick Dougherty and Michael A. Arbib, Co-Editors-The Evolution of Neuroscience for Architecture-Selected papers from the First ANFA International Conference held in September 2012 at the Salk Institute for Biological Sciences.

-٧MAYRA RUIZ ARELLANO-A WEAVING OF NEURO-ARCHITECTURE AND CULTURAL PRACTICES"HAWAIIAN HEALING CENTER" -PhD OF ARCHITECTURE-A DARCH PROJECT SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI'I AT MĀNOA-2015

-٨https://alborsaanews.com/2020/02/09/1294089

-٩https://real-sciences.com/category

-١٠https://www.emerald.com/insight/content/doi/10.1108/REPS-10-2019-0142/full/html

-١١https://www.ma-architects.com/news-insights/articles/how-to-design-a-business-incubator

-١٢https://www.salk.edu/about/visiting-salk/about-salk-architecture/

-١٣https://www.asu.edu.eg/ar/ihub

-١٤https://www.asu.edu.eg/docs/ASU-iHub%20Opening%20Flayer%20final.pdf

-١٥https://ara.architecturaldesignschool.com/how-architecture-affects-your-brain-16779

-١٦mhttps://www.arabcont.com/project-685

-١٧https://coarchitects.com/project/the-salk-institute-east-building/