SPACES THAT HEAL: BUILDING ADAPTIVE POSITIVE BRAIN BASED USER EXPERIENCES WITH ARCHITECTURE AND TECHNOLOGY

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Since the dawn of human culture, builders-druids created environments with special properties that helped people get rid of negative emotions. Spaces loaded with visual, acoustic, aromatic, tactile references, wielded extraordinary power over visitors. This tradition based on intuition is maintained during centuries in architecture, and lost due to scientific rationalism unable to find physical indicators to measure with quantitative Methods. Everything changed when Jonas Salk the well-known American researcher work with architect Louis Khan to design the Salk Institute with focusing on the healing properties of the place. The research institute is a facility that recovers the lost traditions and offers a brain landscape with a special configuration to help researchers focus and relax during intense research journeys. Since then architects collaborated with brain scientists to create spaces with special properties capable of triggering positive brain reactions.

A healing space built in St. Olav’s hospital at Trondheim, Norway. Free space is the starting point of a learning journey about the healing potential of a brain-based design. It’s a place where one can find peace and safety in a vulnerable situation, a place where one can act without being restricted to the surroundings and the people around them. Shape and finishing are used to change the user’s mindset; the architectural solution is also enhanced with a technical facility that tailors every user experience to specific needs. Digital technology is revolutionizing our capacity to monitor (sensors), store (cloud) analyze and process (apps) the complex array of stimulus and offer real time responses. Instant monitoring of responses will allow us develop better solutions and introduce effective innovations that enrich the users’ experiences in built environments.

Neuroscience is unveiling surprising facts; some findings are debunking many established design principles. Some findings are changing the designers’ perception of how architectural elements, space configuration, connection with exterior spaces, trigger our emotions, and stimulate our brain generating different experiences in users. Humans have more than 5 senses, scientists have identified 21; some of them are sensible to the stimulus triggered by inner and outer spaces. Disciplines such as biophilia and behavior science are scaffolding neuroscience discoveries; they are also helping designers inspiring innovations in design.

Studies on the connection between brain and space design share a common weakness, they monitor each reaction separately. Architectural environments are full of factors responsible of unique spatial and emotional experiences. Either Transforming existing architectural settings or designing new ones requires a new set of brain-based design strategies properly organized and connected. An extensive literature review of recent findings in neuroscience, biophilia and behavior science is analyzed. Collected data extracted from scientific research will help designers understand brain based design complexity and relevance. The research will focus on senses responsible of triggering brain reactions in built settings with special focus on sight and hearing.

A new taxonomy and a set of indicators are identified; designer could use them to create innovative scenarios/experiences/spaces for users to generate positive brain responses inside and outside the built environment. This alternative approach builds a better understanding users’ needs, defines new base for user-designer collaboration, and a new array experiences in other building types such as: education, housing, work or health is explored.
Some sample images of St. Olav’s Hospital FR1rom

Additional information
(Link for project website, Link to social media album, project’s blog).