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Sky Factory's Open Sky Compositions stimulate biophilic engagement.

Neural Study on Sky Factory's Open Sky Compositions Earns EDRA's Certificate of Research Excellence

May 24, 2017 – Neural Correlates of Nature Stimuli: an fMRI Study, the award-winning study in neuroarchitecture spearheaded by the Department of Design and the College of Human Sciences at Texas Tech University, in collaboration with Sky Factory, will be awarded a Certificate of Research Excellence (CORE) by the Environmental Design Research Association (EDRA). The ad hoc research team will be recognized at the Awards Gala during EDRA48, the association's annual conference, this year held in Madison, WI, on May 31st.

The project, led by Texas Tech University researchers Drs. Debajyoti Pati, Michael O'Boyle, and Cherif Amor, examined whether there were unique patterns of brain activation associated with exposure to Sky Factory's *Open Sky Compositions* (representing nature stimuli) as compared with other positive nature images, negative, and neutral images.

Initial analysis of the brain maps indicated that Sky Factory's *Open Sky Compositions* shared all of the characteristic neural activations of other positive images, while, additionally, activating several other unique brain regions. Of particular interest to the researchers were the activations found in the cerebellum.

"Brain activation of the cerebellum is often associated with aspects of spatial cognition, in particular the experience of extended space," said neuroscientist Dr.

Michael O'Boyle. "By way of speculation, it may be that viewing Sky Factory compositions evokes a sense of expansion into or through this extended space,"

Unique activation of the cerebellum

Image courtesy of Texas Tech Neuroimaging Institute.

The study analyzed the brain maps generated by viewing four types of imagery—positive, negative, neutral, and Sky Factory's Open Sky Compositions.

he remarked.

"While evidence-based designers are well acquainted with the application of representational nature imagery to create a positive distraction effect in clinical environments," said Debajyoti Pati, PhD, principal investigator and co-author of the study, "no one had yet employed imaging technology to uncover the neural correlates of nature imagery designed to be perceived, not as a

symbolic artifact, but as a spatial reference frame that simulated a multisensory connection to open sky."

The paper was published in *Health Environments Research & Design* Journal (2014), a peer reviewed journal, also earning the *Design & Health International Academy Award* for **Best International Research Project** the same year.

"This research confirms our success in introducing compositional principles and elements into sky images that create the visual cues necessary to trigger biophilic engagement, which is an automatic 'relaxation response' just like we experience in natural environments. The study also confirmed that some compositional relationships are more successful in giving rise to a spatial illusion of nature than others," remarked Bill Witherspoon, Sky Factory founder.

"The credibility of academic research is typically judged on the basis of well-established protocols and peer-reviewed processes," said Lee Helgen, Executive Director at EDRA, "but these tools alone do not easily translate to practice-based research.

"EDRA CORE's unique evaluation framework identifies practice-based environmental design research that is not only rigorous, but also offers measurable value, meets industry challenges, and advances design thinking. "It also recognizes the importance of research in practice; provides a compass to guide designers, researchers, organizations, and manufacturers; and builds on EDRA's tradition of inquiry, reflection, and collaboration and its commitment to innovation," he added.



Unlike positive images of nature, the study found that Open Sky Compositions also engage spatial cognition.

The EDRA CORE is awarded based on the review of a cross-disciplinary jury of academic researchers, practice-based investigators, professional designers, and industry thought leaders.

"We are very grateful to EDRA for creating the CORE program," said Skye Witherspoon, CEO of the Sky Factory, "because it allows practice-based design

studios like ours to validate field-inspired hypotheses and base our product development on rigorous research.

"We are glad to uncover more evidence that the artistic framework we designed does indeed give rise to a multi-sensory illusion of nature whose spatial properties enable designers to create restorative spaces in isolated and otherwise enclosed interiors, which we know are less than ideal for human health and wellness" he added.

Open Sky Compositions are high resolution photographs that are captured, composed, and illuminated as part of a virtual skylight system designed to create a therapeutic, multisensory connection to a perceived natural exterior. Sky Factory's *Luminous SkyCeilings* are used in leading healthcare, corporate, and commercial interiors to improve human health, wellness, and productivity in enclosed interiors.

For more information visit <u>www.SkyFactory.com</u>.