BIOPHILIA 2020 RECOMMENDED READING & RESOURCES

General / Community

- *Nature Inside: A Biophilic Design Guide* (Browning & Ryan, 2020), case studies and a toolkit for integrating biophilia into the design process for diverse building types
- Serenbe Stories Podcast (2020), a popular podcast chronicling life in the leading wellness community. Season 4 focuses exclusively on biophilic design.
- *The Economics of Biophilia* (Browning et al., 2015), the business case for biophilic schools, retail, homes, hospitals and communities (2nd edition anticipated in 2020-2021)
- *A New Pattern Language for Growing Regions* (Mehaffy et al., 2020), a Christopher Alexander style collection of 80 patterns covering a range of interconnected urban design and planning topics, including biophilia.
- Awe, the Small Self, and Prosocial Behavior (Piff, Dietze, Feinberg et al., 2015), peer reviewed research on dispositional tendencies to experience awe that predicted greater generosity and other prosocial emotions.
- Biophilic Design Guidebook (ILFI, 2018), a supplement to the Living Building Challenge v3.1

Workplace

- Biophilic design: Why nature could be a good investment (Steere, 2019) a CNN Business news article
- The Snowball Effect of Healthy Offices (CBRE, 2017), a study of the relationship between people's working environment, their health, well-being and ability to perform at their best.
- Sustainable Facilities Tool - Biophilic Design (US GSA), a resource site for improving occupant health in federal buildings.
- Impact of Wooden Versus Non-wooden Interior Designs on Office Workers' Cognitive Performance (Shen, Zhang & Lian, 2020), an investigation of the effect of wooden elements on the occupant preference and cognitive performance of 20 adults.
- Of cricket chirps and car horns: The effect of nature sounds on cognitive performance (Van Hedger, Nusbaum, Clohisy et al, 2019), an assessment of whether nature-related cognitive benefits extend to auditory presentations of nature.
- Effects of biophilic interventions in office on stress reaction and cognitive function (Yin, Arfaei, MacNaughton et al., 2020), a study in virtual reality that tests the hypothesis that exposure to biophilic indoor environments help people recover from stress and anxiety and those effects differ among different types of biophilic elements.
- The Relative Benefits of Green Versus Lean Office Space: Three Field Experiments (Nieuwenhuis, Knight, Postmes et al., 2014), an examination of the impact of lean and "green" offices on subjective perceptions of air quality, concentration, workplace satisfaction, and objective measures of productivity.

Schools

- The impact of biophilic learning spaces on student success (Determan et al., 2019), a year-long scientific research study of interior design and views on student stress reduction and improved learning outcomes
- Biophilic Net-Positive Design Project (2020), a research and living lab initiative of the University of Minnesota and Indiana State
- Green spaces and cognitive development in primary schoolchildren (Dadvand, Nieuwenhuijsen, Mikel Esnaola, et al., 2015), an assessment of 12-mo change in developmental trajectory of working memory, superior working memory, and in-attentiveness among 2,593 schoolchildren.

Hospitality & Retail

- Global Retail Trends 2018 (KPMG, 2018), a consumer and retail trend report that emphasizes the value of customer experience.
- Human Spaces 2.0: Biophilic Design in Hospitality (Browning et al., 2017),
- Effects of the biophilic atmosphere on intention to visit: the affective states' mediating role (Ortegon-Cortázar & Royo-Vela, 2018), an analysis of how a biophilic atmosphere inspired by nature influences customers' affective states and intention to visit shopping centers.
- The Impact of In-Store Greenery on Customers (Brengman, Willems & Joye, 2012), a study of the effect of in-store vegetation on consumer emotions and responses toward the store, and the moderating role of vegetation in information-rich retail settings.

Other

- Biophilic Design and Climate Change: Performance Parameters for Health (Africa et al., 2019), advocates the use of metrics related to climate change mitigation as a dimension of performance analysis for biophilic design practices.
- Sensorimotor brain dynamics reflect architectural affordances (Djebbara et al., 2019), an investigation of cognitive processes associated with architectural affordances to determine whether cognition depends on movement or is decoupled from our physical structure.
- Fractals are typically not self-similar (3Blue1Brown, 2017), a 19-minute video explaining fractals for non-mathletes