



University Sustainability Practices

Biophilia Contest Background & Rules

Biophilia (n): “Love of life” or peoples’ instinctive bond with other living systems; it is human connection with nature and sense of place. Fostering biophilia includes building and supporting education, appreciation and interaction with nature. These foundations allow not only for ecosystems to thrive, but also promote wellbeing in human communities.

Biophilic design is an emerging field that seeks to incorporate nature into the built environment. Biophilic design has been shown to reduce stress, improve health and enhance mood as well as creativity. With this competition, ASU hopes to incorporate biophilic design into existing facilities to enhance campus life.

The goal of this contest is to bring awareness to biophilic design and the potential it has to improve sustainability and wellness on all of ASU’s campuses. Contest applicants will be the first among many at ASU to champion the biophilic design movement with their unique ideas that aim to improve campuses.

1. Challenge Locations: Applicants may come up with a biophilia-based solution to one of the campus locations listed, or may focus on a unique challenge of their own (guidelines for this below).

- **Challenge 1:** The Sun Devil Fitness Center’s at all 4 campuses are becoming a hub of wellness at ASU. Find a way to incorporate biophilic design into some aspect of one of the facilities to encourage use by new users and/or enhance use of existing users.
E.g.: Wallpaper or paint with nature patterns and/or installations to make the track feel more like a run outdoors or biome themed fitness/meeting rooms (mountain room, desert room) to distinguish and enhance spaces.
- **Challenge 2:** The Memorial Union is the central hub of campus life on the Tempe Campus. Incorporate biophilic design principles into some location at the MU to encourage and enhance student experience while at MU.
E.g.: Living wall or green space in highly trafficked area to create a place for respite and/or group meetings.
- **Your own challenge:** If your team decides to focus on a unique campus challenge not listed above, it must help ASU incorporate biophilic design into an existing facility (preferred) or section of campus.

2. Incorporating biophilia & its design principles:

- All entries must utilize design derived from nature. Major judging criteria in the first round will be based on how biophilic design principles are incorporated into teams' solutions. Teams should refer to resources listed in the next section for guidance, especially the book *Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life* and also the below 14 patterns of biophilic design, as synthesized by Terrapin Bright Green.¹ **Include a minimum of 3 patterns in your design.**

14 Patterns of Biophilic Design:

Nature in the Space Patterns

1. Visual Connection with Nature
2. Non-Visual Connection with Nature
3. Non-Rhythmic Sensory Stimuli
4. Thermal & Airflow Variability
5. Presence of Water
6. Dynamic & Diffuse Light
7. Connection with Natural Systems

Natural Analogues Patterns

8. Biomorphic Forms & Patterns
9. Material Connection with Nature
10. Complexity & Order

Nature of the Space Patterns

11. Prospect
12. Refuge
13. Mystery
14. Risk/Peril (Simulated, not real)

Additional Information on Biophilic Design:

Web Resources:

- <http://www.terrapinbrightgreen.com/reports/14-patterns/>
- <http://www.terrapinbrightgreen.com/report/biophilic-design-case-studies/>
- <http://www.terrapinbrightgreen.com/publications/>
- <http://biophiliccities.org/>
- <http://citiscope.org/story/2015/whats-biophilic-city-let-timothy-beatley-explain>
- <http://www.pbs.org/wgbh/nova/nature/conversation-eo-wilson.html>
- <http://www.hermanmiller.com/research/research-summaries/nature-based-design-the-new-green.html>
- <http://naturesacred.org/>
- <http://waset.org/publications/826/sustainable-and-ecological-designs-of-the-built-environment>
- Loving Nature from the Inside Out: A Biophilia Matrix Identification Strategy for Designers by McGee and Marshall-Baker.
 - Full Journal Article accessed through ASU Libraries

Videos:

- Biophilic World - <https://youtu.be/YnwREmarvcQ>

¹ Source, Terrapin Bright Green: <http://www.terrapinbrightgreen.com/reports/14-patterns/>

- Beyond Green – Towards Restorative Biophilic Design - <https://youtu.be/7mJDMGj37KU>
- <https://www.youtube.com/watch?v=7mJDMGj37KU>
- Biophilic Design: Architecture of Life (Film Showing/Access for Student Teams TBD) - <https://vimeo.com/ondemand/biophilicdesign/2787453>

Books:

- Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life by Stephen R. Kelert, Judith Heerwagen, and Martin Mador
 - E-Book available online through ASU Libraries as well as a hard copy in the Design Library
- Biophilia by Edward O. Wilson
 - E-Book available online through ASU Libraries
- The Biophilia Hypothesis by Stephen R. Kellert and Edward O. Wilson
 - E-Book Sample: <https://books.google.com/books?id=qOg3-J0BoGoC&dq=desert+city+biophilia>
 - Hard copy available through Hayden Library or West Campus Fletcher Library
- Biophilic Cities: Integrating Nature into Urban Design and Planning by Timothy Beatley
 - E-Book Sample: <https://books.google.com/books?id=ncsKAQAAQBAJ&dq=biophilic+cities>
 - Can also be found in the Design Library

Local Inspiration:

- Local preserves, parks and hikes (i.e. Hayden Butte “A Mountain”, Desert Botanical Gardens, etc.)
 - Map of Possibilities: <https://goo.gl/D6mSH3>

3. Eligibility:

- Undergrad or graduate students at ASU may participate
 - ALL group members must be students enrolled at ASU through May 2017.
- Students from all campuses encouraged to participate
- One entry per team
- 3-7 participants per team
- Teams must be interdisciplinary
 - Teams must consist of students from at least two different fields of study
 - Blackboard will be implemented as a resource to meet potential team members, access materials, share information, etc. Access link is provided under section 6 below.

4. Judging and Rewards:²

This contest will consist of two rounds. In the first round, competitors will form interdisciplinary teams to submit ideas through the online application. A panel of 10 judges [USP representative (Mick Dalrymple), Biophilic Design Experts (Joe Zazzera (Plant Solutions), Sonja Bochart (Wellbeing+Design / ASU), Terrapin Bright Green, ASU facilities representatives (Memorial Union, all 4 SDFC's), and SIRF Fund representative (Lisa Frace), will then review the entries, and select semi-finalists. Round 1 will be judged on the following criteria (see evaluation rubric for more information):

- Use of biophilic design principles
- Where your inspiration derived from
- Potential for student, faculty and/or staff engagement
- Originality
- Feasibility
- Budget
- Design that acknowledges place in local Sonoran Desert

² In the event that a design is not selected as winner or runner up in any category, ASU reserves right to not disburse prizes in any or all prize categories.

- Solves a challenge
- Doesn't violate ASU guidelines or impede design guidelines. See sections 7 and 8 for more information.

Round 2 will begin upon the electronic notification of the semi-finalists. Semi-finalists will prepare a 10-minute presentation for the contest judges. The presentations will be video recorded and posted online. Students from all campuses will then be able to vote on their favorite biophilic design (one vote per student). The judging panel will also vote again on semi-finalist presentations. Voting will close after 6 weeks, and the winners will be announced electronically the following week. Rewards amounts are based on the whole team (not individual), but will be distributed equally to individual team members in the form of a scholarship. Scholarships will be disbursed in the fall semester 2017 for students continuing on at ASU. For students graduating in May 2017, scholarships will be disbursed in April 2017.

The reward amounts are as follows:

- 1st place: \$3,000
- 2nd place: \$1,000
- 3rd place: \$500

5. Important Dates & Deadlines:³

- Application release: September 12, 2016
- Consultation event for participants with judging panel: October 12th
- Application deadline round 1: December 1, 2016
- Notification of round 1 finalists: January 9, 2017
- 2nd consultation meeting with finalists: Jan 11th
- Sustainability Speaker Series to learn about biophilia: Feb. 2nd, 2017
- Finalists present to judges (will be video recorded and posted for online voting): February 7th, 2017
- Online voting: Feb. 20th to March 20th, 2017
- Notification of finalists and allocation of reward: early April 3rd, 2017

6. Online Application Components (apply online here)

- Demographic Information
 - Student names
 - Degree program and field of study
 - Expected graduation date
 - Team Point of Contact information (name, phone and email)
- Answered in text boxes:
 - **Background:** Give a brief overview of the idea. How specifically does it utilize biophilic design? Which biophilic principles does it incorporate? How is this concept fit for the Sonoran Desert?
 - **Origin of idea:** What was the inspiration for this idea?
 - **Solution:** What campus challenge does this solve? What specific ways does it solve this challenge?
 - **Vision and goals:** What is the ultimate vision? What specific goals does this vision accomplish?
 - **Engagement:** How does this increase campus engagement with biophilic design?
 - **Strategy for application:** Describe the strategy for application and implementation of this solution. Provide a sample budget for materials, installation, and maintenance.
 - **Metrics for evaluation of effectiveness:** What metrics do you propose to measure the effectiveness of this solution?

³ Please note: these dates are subject to change. Important notifications will be sent through Blackboard, please make sure you check for announcements frequently.

- o **Concerns or constraints:** Identify possible concerns, constraints, and drawbacks to this solution.
- Include as attachments:
 - o Abstract
 - o Budget
 - o Timeline and plan for project implementation (including installation)
 - o Visual/graphic of project idea
 - o Student resumes
- Students must agree to [ASU Intellectual Property Policy](#) (check box at the end of the application form, with link to PDF)

7. Design Guidelines

ASU has websites for design and construction professionals to assist with various projects occurring on campus. Each of the links provide specific design expectations (engineering, electrical, etc.). Please consider these documents when outlining what is possible for your design.

- http://www.asu.edu/fm/documents/project_guidelines/Project-Guidelines.pdf
- http://www.asu.edu/fm/documents/project_guidelines/Sustainable-Design-Guidelines.pdf

8. Project Installation and Implementation

- The selected project will be installed with approval and oversight by representatives from the participating facilities, Office of the University Architect, and Facilities Management.
- All projects must meet ASU health, safety, and design requirements in order to be installed
- ASU may make design adjustments to selected winner in order to make installation and maintenance feasible.
- If a winning project idea cannot be implemented for any reason, ASU reserves the right to pursue installation of the 2nd or 3rd runner-up designs.