



PERSPECTIVES

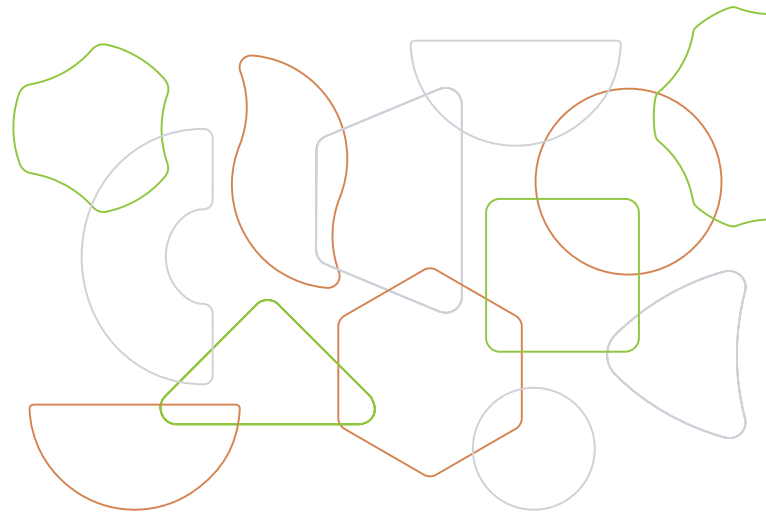
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Shape & Pattern- Perspective 3

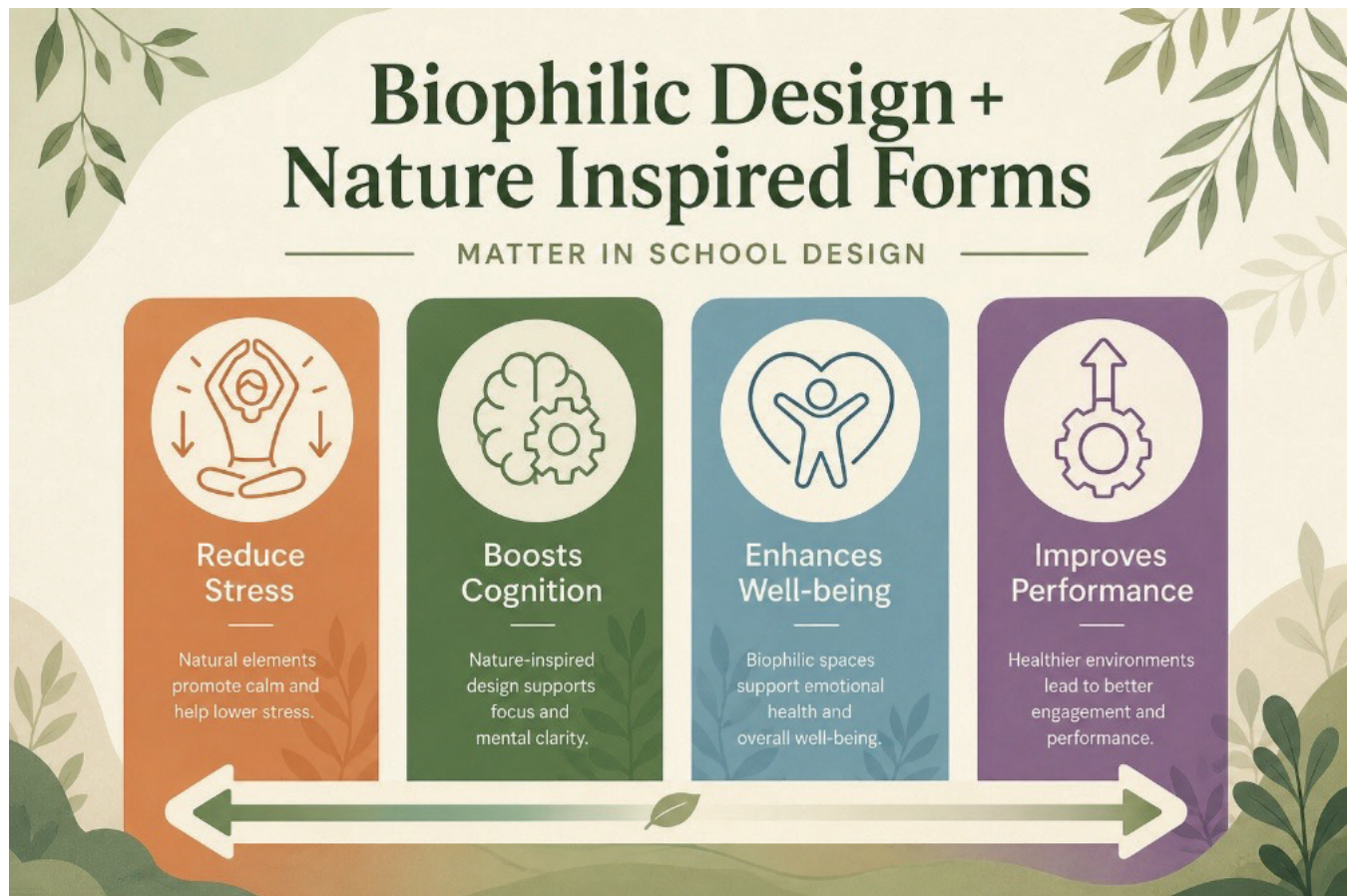
White Paper /
“Watering Hole”: The Connection to Learning



1. INTRODUCTION

We'll start off with remembering that the design of the built environment impacts human performance.¹ That includes the learning environment for both the learner and the educator; particularly when it

comes to cognitive load.^{2,3} In #1, I also introduced the evidence on biophilic research⁴. This image⁵ is a quick reminder of its power. The evidence is undeniable.



So, as we go through this series, I'll try to provide perspectives on both groups – learners and educators. Thornburg's message was, in essence, it's past time to change the way we teach, and focus more on how we help individuals learn out to learn. I

couldn't agree more, and any of you who know me, know I've been on **that** soap box for a long time. We simply know too much to continue down the same path we've been using for over a century! Let's leap frog to the future!

2. 'WATERING HOLE'

If the 'campfire' is all about learning to ask the deep questions in a safe and welcoming way [i.e., psychological safety] – that process may be facilitated in a didactic [i.e., lecture practice], or in the last series' suggestion using the Socratic method as a practice in the round – or circle configuration which is more welcoming and egalitarian. The Watering Hole is the space for social learning – that true connection and interaction with one's peers. Thornburg⁶ ties this idea to the theory of social constructivism of the classic work of Vygotsky⁷. These are spaces for spontaneous meetings, student conversation and brainstorming. Ideally, such spaces would have comfortable chairs and whiteboards for sketching out ideas – thinking out loud. The need for a watering hole space is especially high after a lecture, when students will want to process and discussion the information they just learned. We could think of these as a Library/Learning

Commons, some sort of eating place, a learning place's 'front porch,' etc. These spaces are where social learning becomes the dominant activity. In today's world, if students can look up from their devices, there is potential for real dialogue. Thornburg shares insights from a communication expert.



"Dialogue is precisely that moment in which people say things they would not say if they weren't conversing with another person. It's the opportunity to produce knowledge and a way of thinking that's different from when people are alone. They are stimuli that redirect thought with each intervention. This means that the outcome of the dialogue is absolutely unexpected..."^{p. 17}

This quality of dialogue – a characteristic of the Watering Hole – is tremendously important in the domain of education. Lev Vygotsky, the father of social constructivism [a learning theory], makes reference to the zone of proximal development – the domain where a learner may be ready to advance to the next step of understanding, but is triggered to this new level by the social interaction of a teacher or a peer."^{p.18, in 8}

As for where this triggering may take place, it doesn't much matter. It can be inside or outside of

school. The critical element is that it takes place in a social environment in which conversation is not only permitted, but also encouraged."^{p.18} Just think about these last words – permitted. Wow! Hard to imagine we actually have to call that out. But oh well, what kinds of places and shapes might encourage these water hole effects? If we go back to our first paper 'Shapes & Patterns,'⁹ we could determine several to the psychology of shape. First, let's put these into a context.

3. The Places

Watering Holes are places of social convening. I mentioned a few which might be found on or near a learning campus. The library, or sometimes called the Learning Commons, is now a place where 'learning can be seen.' I'm going to reference a study done on one such place where I was a researcher and co-author of this work – Can a library building's design cue new behaviors? A case study¹⁰. "This paper attempts to address the academic library's expanding role as a learning partner in a spatial context by applying that idea to the relationship between spatial design and environmental messages at both the micro- and macro-levels. Student success is predicated on

a high level of engagement, and user behaviors indicate engagement,¹¹ hence this exploration of user behaviors in an informal learning environment.

"Environment behavior theory argues that space impacts behaviors,"¹² Another classic author referenced in the visioning and design of the building was E.T. White¹³ and in his text Building Meaning he indicates, "Building image analysis can help us... to communicate better with our clients about the nature of the design problem to be solved and the reasons for design decisions."¹⁴

In context of the Watering Hole, it is argued here that these four parameters give spatial recognition to multiple ways of being referenced as 'Zones of Behavior.' p. 847

Zones of Behavior

PUBLIC



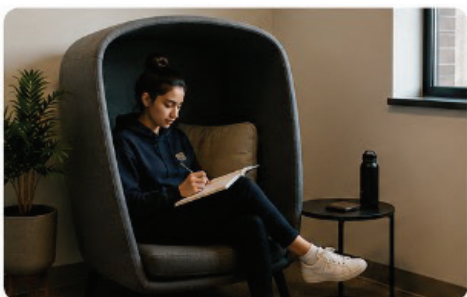
Alone, but in a public space



Together in a public space

ALONE

TOGETHER



Alone in a private space



Together in a private space

PRIVATE

1) Private/Alone:

The behavioral function of the private/alone zone is to support an individual's focused work. These spaces need to support multiple postural changes, meet electronic needs, and provide a sense of privacy and security because students "camp out" in these spaces, sometimes for hours at a time.

2) Public/Alone:

In this behavioral zone, individuals still work alone but do so intentionally in the presence of others. These students do not wish to be isolated and, in fact, want to see others and hear the noise associated with having others close by. For these students, background noise, like the quiet conversation and other ambient sounds at a coffeeshop, helps them to concentrate. The space might have a residential-style decor with multiple seating types and homelike amenities.

3) Private/Together:

Private/together space types focus on group learning. Such spaces should have an abundance of tools, both analog, such as whiteboards and paper, and digital, such as laptops, to encourage creative, social collaboration among students. Vertical surfaces such as whiteboards for sketching and recording ideas are a must. Group sizes might range from small (for example, 4 to 6 members) to large (for example, 6 to 10). These groups prefer to work in private, isolated from other activities in the building. Such support for team projects and group projects is one of the new roles or library design.

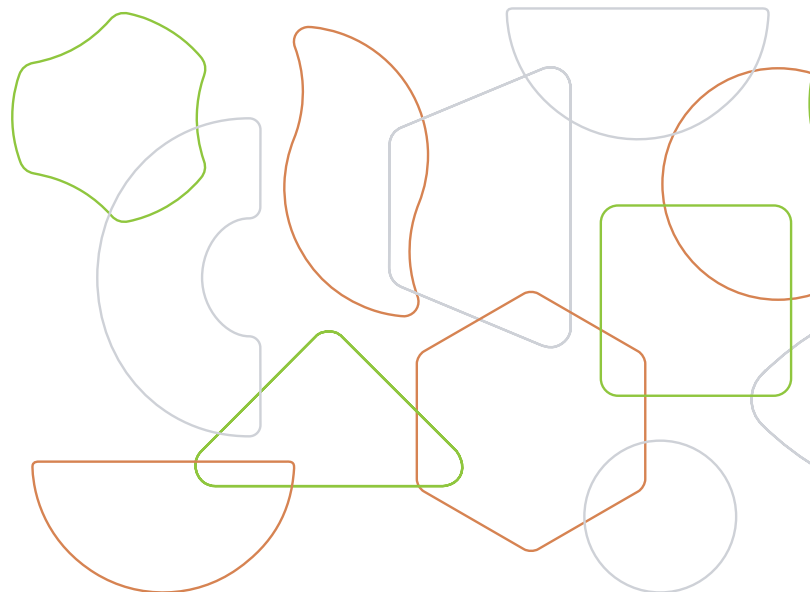
4) Public/Together:

These types of settings support a broad range of activities. The functions may include impromptu meetings, tutoring, and scheduled events. Users are publicly visible and purposefully interact with one another.

Using these zones as both a pragmatic design tool and a conceptual framework helped the designers and stakeholders better visualize the continuum of the learning process. By connecting specific design decisions to intended learning behaviors, the building and its contents were set up for a deliberate, ongoing study of engagement." pp. 847 & 848

Analysis revealed four key attributes of engaging in thinking about a new library design: engagement culture, core connectedness, environmental messages, and transformational challenges, thus affirming that spatial designs can influence behaviors.",^{15 p.843}

Although the research I'm sharing was from a higher education entity, critical attributes are sharable across the K-20 spectrum. There are four specific ones.




How Space Shapes Behavior

Four attributes of intentional learning environments

1 ENGAGEMENT CULTURE

Students have choice and control



Small Group Pair Work Individual Large Group

2 ENVIRONMENTAL MESSAGES

The space communicates purpose



Natural Light Variety of Settings Warm & Welcoming Place of Pride

• **Attribute One** – Engagement Culture recognized that, “Students should have choice and control over where and how they meet and the sizes of those gatherings. Students can adopt a range of postures and conditions, make private places and stake claims to them, and physically move furnishings (sometimes from one floor to another).”^{p. 853} All to ensure they can work together the way they see fit. The bottom line here – affordances need to be dynamic and fluid.

• **Attribute Two** – Environmental Messages. “The architecture inspires student to come, gather, connect and engage in their learning activities. It’s a place of pride for all... [library staff comment]...Gorgeous. I love it...I think the variety of like, not only furniture, but also just the kind of spaces that we have here. This has a lot of different uses, and it appeals to a lot of different people. [student].”^{p. 853}

3 CORE CONNECTEDNESS
People find people and resources

Sense of Belonging **Resources & Experts** **Multiple Zones** **Different Cues for Learning**

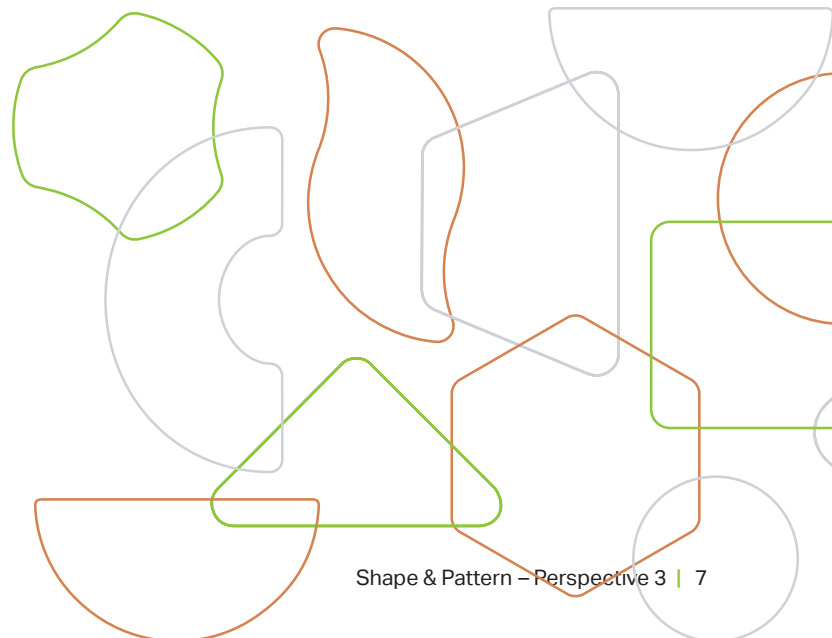
• **Attribute Three** – Core Connectedness.
 “The students and faculty responded to this building as a learning commons, feeling a sense of belonging and connectedness to learning and scholarship...Students are seekers who find appropriate resources or fellow students to help them with their problems or concerns... This study also showed that design zones can provide behavior cues...The open, semi-open and closed segments allowed student to appropriate the type of spaces needed for particular learning tasks, whether as individuals or in small groups. ^{p.857}

4 TRANSFORMATIONAL CHALLENGES
Culture changes more slowly than space

THE OLD NORMAL **THE NEW POSSIBLE**

Old habits persist **Space alone doesn't change culture** **New behaviors develop over time** **Design & culture must align**

• **Attribute Four:** Transformational Challenges.
 Most interesting at first was the culture of silence that the students carried with them from the old building to the new one.” ^{p.857}



4. Watering Hole Characteristic and Cueing Permission

Connecting physical places and their design attributes must be intentional. Understanding how the cues actually 'trigger' responses is therefore necessary. The Zones of Behavior is one tool which might be helpful in realizing the kinds of opportunities spatial typologies may offer.

Quiet team spaces allow for connectivity and collaboration – with a view to nature to keep things calm, but also some tools for both analogue and digital ideation are important. The shape is in a square frame which denotes – stability, framing and importance. A half circle = gentleness, unity and balance; alone/together.



An open common area allows for people to see and be seen, collaborate as groups with choices in seating and postural options. Again, views to a natural landscape adds neuro-design support. Circles and squares are here again. Along with a sense of a 'flowing curve' = continuity, grace and elegance; public/together.

Circulation and the notion of wrapping oneself adds a sense of psychological protection and refuge¹⁶. Natural elements, textures and patterns along with specific curvilinear shapes generate specific behavioral cues. The circle meets the hexagon = communication, balance and trust; public/together.



Shapes and patterns cue our behaviors – the 3rd teacher, the silent language – whatever body of knowledge/practice 'tickles your fancy.' The bottom line – design matters and impacts human performance. The next place type to address, continuing with Thornburg's ideas is the "Cave." What might we uncover there?

Always digging deeper. Until next time.



5. ENDNOTES

- ¹¹ Scott-Webber, L. (2024). EDmarket Certified Learning Place Specialist Program (ECLPS): curricula, content, and course materials. Publisher: Education Market Association.
- ¹² Maxwell, 2010 in Marchand, G.C., NicNardi, N.M., Reynolds, D. & Pamoukov, S. (2014). The impact of the classroom-built environment on student perceptions and learning, *Journal of Environmental Psychology*, Volume 40:187-197, ISSN 0272-4944, <https://doi.org/10.1016/j.jenvp.2014.06.009>
- ¹³ Cognitive Load Theory: <https://www.landmarkoutreach.org/strategies/cognitive-load-theory/>; Luo, H., Hu, H., Zheng, Z. et al. (2024). The impact of living environmental factors on cognitive function and mild cognitive impairment: evidence from the Chinese elderly population. *BMC Public Health* 24, 2814. <https://doi.org/10.1186/s12889-024-20197-2>
- ¹⁴ Browning, B., Ryan, C. & Serafin, S. (2024). 14 Patterns of Biophilic Design. Improving health and wellbeing in the built environment. Terrapin Bright Green. <https://www.terrapinbrightgreen.com/reports/14-patterns/>
- ¹⁵ MARCO (2025). The psychology of shape. CEU.
- ¹⁶ Thornburg, David, 1943-. (2014). From the campfire to the holodeck: Creating engaging and powerful 21st century learning environments. San Francisco, CA: Jossey-Bass.
- ¹⁷ Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (Cole, M., John-Steiner, V., Scribner, S. & Souberman, E., Eds.) Cambridge, Mass.: Harvard University Press.
- ¹⁸ Vygotsky, L. (1978). *Mind and society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- ¹⁹ n.a. (2025). Psychology of shapes in design. <https://www.dochipo.com/psychology-of-shapes/>
- ¹⁰¹ O'Kelly, M., Scott-Webber, L., Garrison, J. & Meyer, K. (2017). Can a library building's design cue new behaviors? A case study. *portal Libraries and the Academy*, 17(4): 843-862. DOI: 10.1353/pla.2017.0049; John Hopkins University Press, Baltimore, MD.
- ¹⁰² Scott-Webber, L., Konyndyk, R., & Denison, M. (2019). POE: Understanding innovative learning places and their impact on student academic engagement – index 6-8 'alpha' survey developments. *Canadian Center of Science and Education*, 8(5), pp 31-56. URL: <https://doi.org/10.5539/jel.v8n5p31>
- ¹⁰³ Scott-Webber, L. (2004). *INSYNC: Environment behavior theory and the design of learning places*. Society of College and University Planning, Ann Arbor, MI.
- ¹⁰⁴ Edward T. White, *Building Meaning: Analysis and Design for Image-Sensitive Projects* (Tallahassee, FL: Architectural Media, 1996), 4.
- ¹⁰⁵ O'Kelly, M., Scott-Webber, L., Garrison, J. & Meyer, K. (2017). Can a library building's design cue new behaviors? A case study. *portal Libraries and the Academy*, 17(4): 843-862. DOI: 10.1353/pla.2017.0049; John Hopkins University Press, Baltimore, MD.; p. 5.
- ¹⁰⁶ O'Kelly, M., Scott-Webber, L., Garrison, J. & Meyer, K. (2017). Can a library building's design cue new behaviors? A case study. *portal Libraries and the Academy*, 17(4): 843-862. DOI: 10.1353/pla.2017.0049; John Hopkins University Press, Baltimore, MD.; p. 5.
- ¹⁰⁷ Lynch, J.M., Strange, K.C., Dowrick, C., Getz, L., Meredith, P.J., Van Driel, M.L., Harris, M.G., Tillack, K. & Tapp, C. (2025). The sense of safety theoretical framework: A trauma-informed and healing-oriented approach for whole person care. *Frontiers Psychology*, 15; Section Personality and Social Psychology. <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2024.1441493/full>