

The Ergonomics of Pillow Forts: Structural Integrity and Comfort Optimization in Temporary Domestic Constructions

Abstract

Let's be honest - pillow forts don't exactly scream "serious architecture." But that's precisely why they're worth studying. This thesis digs into those flimsy blanket-and-cushion structures that kids (and fun adults) build in living rooms, seeing them not as childish play but as revealing architectural moments.

While "real" architecture obsesses over permanence and expertise, I argue that these temporary constructions actually tell us something fundamental about how humans relate to their surroundings. Drawing from theories on embodied knowledge and spatial agency (but without drowning in academic jargon), I show how pillow forts naturally incorporate principles that professional architects sometimes forget - things like human comfort, material efficiency, and the ability to change on the fly.

What makes pillow forts particularly interesting is how they blur the lines between designer, builder, and occupant. The same person handles all three roles, creating immediate feedback that allows the structure to evolve in real-time. I'm not suggesting architects should abandon buildings for blankets (that would be ridiculous), but rather that these humble constructions might remind the profession of its core purpose: creating spaces that actually work for the humans using them.

The findings have implications for how we teach architecture, how we might approach participatory design, and how we could design more adaptable buildings in our environmentally uncertain future. Sometimes the most obvious insights are the ones we most need reminding of.

1. Introduction

1.1. Context and Significance

Watch a kid drag cushions off the couch and you're witnessing a tiny rebellion. That perfectly arranged living room - the shrine to adult taste and order - suddenly becomes a construction

site where normal rules don't apply. It's just a pillow fort, sure, but there's something fascinating happening in that moment of spatial hijacking.

Architecture has always had this annoying habit of drawing lines between the experts and everyone else. As Jeremy Till (2009) points out in his book about how architecture needs to get over itself, the profession loves maintaining this mystique that keeps regular people from messing with "their" domain. Normal folks are supposed to just passively live in spaces, not create them. But pillow forts flip this on its head - suddenly non-architects are grabbing control of their environment, even if just temporarily.

What makes these silly structures worth studying isn't their sophistication (they have none) but exactly the opposite - they exist completely outside professional architectural thinking. No building codes, no design theories, no client meetings. Just immediate needs, available materials, and an intuitive sense of what makes a space feel good. When you remove all the professional baggage, what fundamental aspects of creating space remain? That's the interesting question.

1.2. Research Objectives

I should clarify that I'm not about to make some ridiculous claim that pillow forts represent architectural revolution. (Though that would make for an entertaining thesis defense.) Rather, I see them as useful contrasts to "proper" architecture - places where qualities that often get sidelined in professional work (comfort, adaptability, sensory richness, resource efficiency) temporarily take center stage. With this framing, I'm trying to:

1. Look at how people with zero training somehow manage to figure out fundamental architectural principles just by playing around with cushions and blankets
2. Examine how these structures naturally prioritize human comfort, sensory experience, and social needs (sometimes better than actual buildings)
3. Investigate what happens when the designer, builder, and user are all the same person - a situation that never happens in conventional architecture
4. Consider how the deliberately temporary nature of these structures might offer different perspectives on architecture's obsession with permanence and durability
5. Think about what architectural education might learn from the way people intuitively approach spatial problems

1.3. Theoretical Framework

To avoid making this sound like I just think pillow forts are neat, I'm drawing from several interconnected theoretical areas. First, I'm building on ideas about spatial agency from people like Awan, Schneider and Till (2011), who've written about how non-professionals can and should have more say in how spaces get made. I'm also pulling from theories about

embodied cognition from writers like Pallasmaa (2009) and Mallgrave (2013), who talk about how physical engagement with materials creates a different kind of knowledge than just thinking about things abstractly.

The ideas of human-centered design from people like Christopher Alexander and Jan Gehl also come into play, helping me analyze how these informal structures prioritize experience over technical or formal concerns. And I'm considering what Stewart Brand (1995) and Jonathan Hill (2003) have written about how buildings relate to time - because pillow forts' explicit temporariness creates a completely different approach to materials, structure, and what counts as "success."

And yes, pillow forts are naive. But I'm treating this naivety as a feature, not a bug. It's what Nigel Cross (1982) might call a different "way of knowing" that exists outside formal education. Through this lens, stacking some cushions becomes a surprisingly rich way to reconsider what architecture is fundamentally about.

2. Spatial Agency and Architectural Democratization

2.1. Accessibility of Spatial Creation

Architects have done a remarkable job convincing everyone they're essential to the creation of decent spaces. The whole profession is built on this weird contradiction that Awan, Schneider and Till (2011) nail perfectly: architecture presents itself as having this incredibly far-reaching knowledge while simultaneously using language so specialized that nobody else can participate. Convenient, isn't it? All authority, minimal accountability.

This is why pillow forts are such a refreshing counterpoint. Anyone can make one. You don't need special materials - just whatever cushions, blankets, and furniture are already lying around your house. There's no technical knowledge barrier - no need to understand structural calculations or building codes. You learn by doing and failing. That blanket keeps collapsing? Try tightening it or weighing down the corners. It's immediate trial and error rather than years of specialized education.

Tim Ingold (2013) would probably see this as a perfect example of direct "making" rather than abstract designing. You're not working from plans or calculations - you're responding directly to the materials in front of you, discovering their properties through hands-on engagement.

The regulatory freedom is significant too. Professional architecture is absolutely drowning in building codes, zoning laws, accessibility requirements, and professional standards (Imrie and Street have a whole book about this regulatory nightmare from 2011). These regulations serve important purposes, but they also severely limit experimentation. Fort builders answer to no authority but physics and personal comfort, allowing forms of spatial play that professional architects could only dream about.

2.2. Non-specialized Architectural Expression

This democratized approach raises some interesting questions about what counts as "legitimate" architecture. Bernard Rudofsky stirred up the architectural establishment back in 1964 with his exhibition on vernacular building traditions, arguing that we've been ignoring most of the world's architecture by only focusing on fancy "Architecture with a capital A." Pillow forts take this even further - they're not even part of any established building tradition. They're ultra-vernacular, arising spontaneously wherever there are cushions and bored humans.

What's fascinating is that pillow forts emerge outside any cultural building tradition. Unlike traditional vernacular architecture, which develops within communities through shared knowledge (as Paul Oliver discusses in his massive documentation of global building traditions), pillow forts are invented fresh by each builder. They're architectural expressions that develop without any conscious reference to established traditions or techniques. They're naive architecture in the purest sense.

This naivety is actually what makes them analytically valuable. Fort builders haven't internalized all the disciplinary norms that Bourdieu (1977) would call the "habitus" of architectural practice. They're free from all the implicit rules that constrain professional designers. This outsider position allows them to prioritize things that architectural training might suppress - like immediate bodily comfort over visual composition, or adaptability over formal purity.

There's also something democratizing about fort construction across demographics. Architectural education remains ridiculously exclusive (just ask Garry Stevens, whose 1998 book thoroughly documents architecture's socioeconomic gatekeeping). Pillow fort building, meanwhile, happens across social classes, age groups, and cultural contexts. This diversity introduces different spatial approaches reflecting varied needs, social patterns, and aesthetic preferences.

2.3. Empowerment Through Environmental Authorship

Perhaps the most significant aspect of pillow fort construction is how it flips the script on who gets to create environments. Kim Dovey (1999) has written extensively about how spatial arrangements reflect power dynamics, with most people positioned as passive recipients rather than active creators of their surroundings. Fort construction temporarily disrupts this relationship, letting occupants take control of their environment, even if just in a small, temporary way.

The psychological impact goes beyond just the immediate fun. Environmental psychologists have been studying this for decades - Proshansky in the '80s, Korpela in the late '80s and '90s - showing that being able to modify your surroundings significantly contributes to psychological well-being and sense of identity. By letting people directly manipulate their environment, fort building creates what Henri Lefebvre (1991) would call "spatial appropriation" - the process by which abstract space becomes meaningful place through active engagement.

This democratization of design also connects to feminist critiques of architecture. Dolores Hayden (1981) and later Jane Rendell with colleagues (2000) have argued persuasively that conventional architectural practice often ignores diverse spatial needs in favor of standardized assumptions about how spaces should be used. Fort construction, in contrast, responds directly to the specific requirements of whoever's building it. If you want to lie down and read, you make a fort with good light and comfortable padding. If you want a social space for multiple kids, you create larger openings and more interior room. The space serves the actual users, not some abstract ideal.

I'm not saying professional architectural knowledge is worthless - that would be absurd, especially considering I'm writing this thesis to get an architecture degree. Rather, I'm suggesting that architecture might benefit from more permeable boundaries between professional and everyday spatial practices. As Jeremy Till argues in "Architecture Depends" (2009), the profession might become more socially responsive by acknowledging its dependence on forces beyond professional control and engaging more meaningfully with non-specialist perspectives. Pillow forts aren't replacements for professional practice but reminders of what architecture might learn from more democratized forms of spatial creation.

3. Embodied Structural Knowledge

3.1. Intuitive Discovery of Architectural Principles

Architecture school has this backwards approach to teaching structure. We start with math, diagrams, and theories before ever letting students actually build anything real. Then we wonder why so many architects design beautiful buildings that leak, overheat, or feel uncomfortable. It's like learning to swim by reading books about water.

Fort building flips this completely. With no formal training whatsoever, fort builders discover fundamental architectural principles through trial and error. They figure out that blankets can span distances when pulled tight between fixed points - essentially inventing tensile structures that Frei Otto would later turn into an entire design philosophy. They learn that pillows are more stable when their largest surfaces touch - unconsciously implementing the same load distribution principles that inform wall construction.

This isn't revolutionary knowledge - these are the same basic principles behind all buildings from prehistoric shelters to fancy skyscrapers. What's interesting is how this knowledge is acquired. These builders aren't learning from textbooks or professors but through what Michael Polanyi (1966) called "tacit knowledge" - understanding that's hard to verbalize but shows up in practice. It's what Donald Schön (1983) described as "knowing-in-action" - knowledge embedded in the doing rather than separable from it.

The direct, hands-on nature of this learning creates a different relationship with architectural knowledge than formal education typically provides. It's messier but often more intuitive - you understand why something works because you've felt it fail and fixed it, not because someone explained the formula.

3.2. Experiential Learning vs. Theoretical Abstraction

This distinction between learning-by-doing and learning-by-theorizing has huge implications for architectural education. Juhani Pallasmaa (2009) has been arguing for years that architectural schools are producing designers who think primarily with their eyes rather than their whole bodies. We're increasingly trained to create buildings that look good in renderings rather than feel good to inhabit.

Fort building engages people with what Gibson (1979) called "affordances" - the action possibilities that materials and environments offer. Builders develop what I'm calling "material intelligence" (though I'm sure someone else has used this term before me) - an intuitive feel for how materials behave under different conditions. They discover that some blankets drape nicely while others are too stiff, that couch cushions compress and stabilize when weight is applied, that chairs can become structural columns when arranged in certain configurations. This knowledge doesn't come from reading about textile properties or compression forces but from directly handling the materials.

The cognitive effects are significant. Researchers in embodied cognition like Andy Clark (2008) and Shaun Gallagher (2005) have shown that physical engagement activates different neural pathways than abstract thinking. Knowledge gained through bodily interaction becomes integrated differently into our understanding, creating what George Lakoff and Mark Johnson (1999) call "primary metaphors" that shape how we think about even abstract concepts.

This bodily learning stands in stark contrast to architecture's increasing reliance on digital tools. Malcolm McCullough pointed this out back in 1996, and Pallasmaa (2012) has been warning about "ocularcentrism" - our overwhelming emphasis on visual understanding at the expense of other senses. Fort construction, with its direct physical manipulation of materials, develops forms of spatial understanding that our digital design processes often neglect.

3.3. Temporal Considerations in Non-permanent Structures

Here's where things get really interesting. Professional architecture is obsessed with permanence. Stewart Brand (1995) called this "long now" thinking - designing buildings to last for decades or centuries. This long-term perspective fundamentally shapes material choices, structural approaches, and how we evaluate architectural success.

Fort construction exists in a completely different timeframe. These structures need to stand for hours or days, not years. This temporal shift changes everything. Fort builders accept structural compromises that would be completely unacceptable in "real" buildings. A little sagging under load? No problem if it's comfortable and won't collapse on your head. Connections that need occasional readjustment? That's fine for an afternoon of play. Materials that gradually deform with use? Perfectly acceptable for a structure that will be dismantled before bedtime.

This approach creates what I'm calling "structural pragmatism" - focusing on immediate functionality rather than long-term performance. It's similar to what Tim Ingold (2011) describes as skilled improvisation - working with available materials in the moment rather than requiring specific resources for a predetermined plan. Fort builders repurpose household items based on their immediate structural potential rather than their intended functions. That stack of Harry Potter books becomes a critical structural element. The broom handles appropriated from the closet become tent poles. It's adaptive reuse in its purest form.

I'm not suggesting architects should start designing collapsible buildings (though in some cases that might not be a bad idea). But this comfort with impermanence feels increasingly relevant as we face accelerating change and environmental challenges. Thomsen and van der Flier (2011) have documented how buildings face increasingly uncertain futures due to technological, social, and climate changes. Maybe architecture needs to get more comfortable with impermanence - designing structures not for eternal stability but for adaptability, disassembly, and material reuse. The fort builder's approach, while obviously simplistic, might offer some useful perspective for architecture in an age of uncertainty.

4. Human-centered Spatial Design

4.1. Body-centric Spatial Configuration

Have you ever noticed how many architecturally celebrated buildings are actually uncomfortable to be in? This isn't a coincidence. Contemporary architectural practice often starts with abstract formal concepts, cool visual compositions, or theoretical positions, and then expects human bodies to adapt accordingly. Kent Bloomer and Charles Moore called this out back in 1977, criticizing architecture's obsession with visual composition at the expense of how buildings actually feel to inhabit. The result? Visually striking buildings where you can't find the entrance, where acoustics make conversation impossible, or where furniture feels awkwardly placed in geometrically perfect but functionally weird spaces.

Pillow forts flip this approach completely. They start with the body and its immediate needs, creating spaces that are literally shaped around their occupants. Unlike conventional architecture, which relies on standardized dimensions from those Neufert architectural data handbooks (that everyone owns but nobody actually reads), fort spaces are calibrated directly to the specific bodies of whoever's building them. The resulting spaces maintain what anthropologist Edward Hall (1966) would call "intimate" or "personal" distances rather than the "social" or "public" distances of most architecture. This creates what Gaston Bachelard wrote about so beautifully in "The Poetics of Space" (1994) - environments that support not just physical comfort but a kind of psychological coziness.

Fort construction also naturally accommodates how bodies actually exist in space - not as static entities but as constantly moving, shifting beings. Maxine Sheets-Johnstone (2011) writes extensively about this, arguing that bodies exist in constant motion rather than static poses. Fort spaces accommodate this reality through what I'm calling "postural affordances" - configurations that support various positions (sitting, lying, crouching) rather than forcing a

single "correct" posture. The soft boundaries yield to body pressure, creating spaces that adapt to you rather than forcing you to adapt to them.

This whole approach aligns with what Bloomer and Moore advocated as "body-conscious design" - treating the body not as an afterthought that will be accommodated with furniture, but as the fundamental reason the space exists at all. While conventional architecture often creates standardized volumes that are then filled with ergonomic furnishings, fort construction integrates ergonomic considerations into the spatial structure itself. The boundary between architecture and furniture temporarily dissolves.

4.2. Sensory Dimensions and Material Properties

Architecture has been experiencing what academics love to call a "sensory turn" in recent decades, with theorists like Pallasmaa, Zumthor, and others reminding us that buildings aren't just visual objects but multi-sensory environments. This represents a necessary correction to what Pallasmaa calls modernism's ocularcentrism - its obsession with how buildings look rather than how they feel, sound, or smell.

What's fascinating is that fort builders, operating completely outside architectural discourse, naturally prioritize sensory richness. The materials typically used - blankets, pillows, cushions - offer tactile experiences completely different from the hard, often cold surfaces that dominate conventional architecture. These soft textures engage what Bloomer and Moore called the "haptic sense" - the combination of touch and bodily awareness that forms a fundamental but often neglected aspect of spatial experience.

The acoustic properties of these materials create distinctive sonic environments too. Barry Blesser and Linda-Ruth Salter wrote a whole book about "aural architecture" in 2007, examining how spaces shape sound. Fort interiors typically dampen external sounds while amplifying internal ones, creating acoustic intimacy that enhances the sense of separation from the surrounding environment. This supports what Christopher Alexander identified as the "intimacy gradient" - the psychological comfort that comes from progressive transition from public to private spaces.

Light behaves differently in these spaces as well. External illumination filters through textile layers, creating a quality of shadow and graduated light that Jun'ichirō Tanizaki celebrated in his classic essay "In Praise of Shadows" (1977). This filtered illumination contrasts sharply with the even, flat lighting that dominates contemporary western architecture. It creates depth, mystery, and variation that engage what philosopher Merleau-Ponty (1962) called the "primacy of perception" - the fundamental role of sensory experience in how we understand space.

Together, these sensory qualities create what I'm calling "atmospheric density" - an experiential richness that comes from the convergence of tactile, acoustic, and visual qualities. Gernot Böhme (2017) has written extensively about atmospheric architecture - environments designed to create particular moods or feelings through their sensory characteristics. Fort builders achieve this atmospheric quality not through sophisticated technical systems but through simple material choices and configurations.

4.3. Ergonomic Adaptability

One of the coolest things about pillow forts is how they continuously adapt to ergonomic needs. Unlike conventional buildings, which provide fixed environments that occupants must adapt to (or renovate at great expense), fort structures evolve in real-time response to comfort requirements. This responsive quality emerges from what Gibson (1979) called the "complementarity" between organisms and environments - the mutual shaping that happens through ongoing interaction.

This adaptability works at multiple scales. At the smallest scale, soft materials yield to bodily pressure, creating customized support surfaces. Herman Hertzberger (1991) wrote about the value of "soft edges" in architecture - elements that mediate between defined and undefined spatial conditions. Fort structures are almost entirely soft edges, constantly negotiable. At a larger scale, the overall configuration easily reconfigures as activities or social arrangements change. This is what Schneider and Till (2007) advocate as "flexible housing" - environments that accommodate changing requirements without major modifications.

This approach reflects the distinction Tim Ingold (2013) makes between "making" and "building" - between processes that evolve through ongoing engagement with materials versus those that implement predetermined designs. Fort construction exemplifies making in this sense, continuously adjusting to conditions as they emerge rather than forcing materials into a fixed plan. Stewart Brand (1995) would call this "adaptive architecture" - environments that evolve through use rather than remaining static despite changing needs.

The implications for professional practice are significant, especially as sustainability concerns increase pressure for more adaptable buildings. Schmidt and Austin (2016) argue that adaptability is becoming not just a functional benefit but an ecological necessity as buildings face uncertain future requirements. The fort builder's intuitive approach to ergonomic adaptation, while obviously simplistic, might offer insights into creating environments that respond to occupant needs without requiring resource-intensive renovations.

I'm not suggesting architects should start stuffing buildings with pillows (though I wouldn't complain if they did). But this sensitivity to bodily comfort and adaptation offers a valuable counterpoint to architecture's frequent prioritization of visual form over lived experience.

5. Collapsed Roles and Continuous Adaptation

5.1. Designer-Builder-Occupant Integration

The construction industry has this weird, dysfunctional arrangement where different people design, build, and use buildings. Architects create plans, contractors interpret those plans (often complaining about unrealistic details), and clients eventually occupy spaces that may

or may not work as intended. This separation, which solidified as architecture professionalized (Andrew Saint wrote a great book about this process in 1983), creates what John Habraken (1972) criticized as a fundamental disconnect between design decisions and lived reality.

Pillow fort construction obliterates these distinctions. The same people imagine, build, and inhabit the structure. This isn't just a cute observation - it fundamentally changes how the space evolves. When fort builders encounter problems during construction, they don't file RFIs (Request For Information) or create change orders - they just immediately adjust their approach. When something feels uncomfortable during use, they don't schedule a renovation project for next fiscal year - they fix it on the spot. This immediacy creates what Donald Schön (1983) called "reflection-in-action" - the continuous adjustment of approach based on direct feedback.

This role integration also eliminates what economists would call "principal-agent problems" - situations where the interests of decision-makers diverge from those affected by the decisions. Howard Davis (2000) suggests this divergence helps explain why so many buildings prioritize qualities valued by architects (formal innovation, theoretical sophistication) over those valued by occupants (comfort, functionality, emotional resonance). When the same person handles all roles, design priorities naturally align with lived experience.

The result is what I'm calling "experiential pragmatism" - a focus on how spaces actually feel over how they theoretically should work. Fort builders readily abandon configurations that create awkward entry sequences, uncomfortable seating positions, or inadequate headroom, regardless of any theoretical merits or aesthetic purity. This practical approach aligns with what Christopher Alexander (2012) advocates as "harmonious" architecture - design that prioritizes human experience over theoretical or stylistic concerns.

I can already hear architects protesting - "but buildings are complex technical systems requiring specialized expertise!" They're right, of course. I'm not suggesting we abandon professional roles entirely. But the fort builder's integrated approach offers a provocative contrast to architecture's increasingly specialized and fragmented processes.

5.2. Real-time Responsive Architecture

Beyond collapsing traditional roles, fort construction enables a completely different relationship between design and adaptation. In conventional architectural practice, adaptation typically requires separate intervention projects that happen months or years after initial construction. Think about office renovations, home remodels, or building retrofits - they're all distinct events separated in time from the original construction.

Fort construction, by contrast, features continuous adaptation throughout the structure's lifespan. This creates what I'm calling "real-time responsive architecture" - environments that evolve synchronously with occupant needs rather than gradually falling out of alignment until a renovation realigns them.

This responsiveness works through immediate feedback loops between occupation and modification. If a blanket sags and creates uncomfortable headroom, it gets adjusted immediately. If light penetrates too directly through a thin fabric layer, another blanket gets thrown over it. If the entrance proves awkward to navigate, it gets reconfigured. Each modification responds directly to lived experience rather than abstract planning considerations.

The real-time nature of this adaptation sidesteps what Stewart Brand (1995) identified as the "scenario-buffered building" problem - environments designed to accommodate anticipated rather than actual needs. As Brand observed, such anticipatory design inevitably fails to predict actual usage patterns, creating buildings increasingly misaligned with occupant requirements. Fort construction avoids this through what I'm calling "continuous commissioning" - ongoing adjustment that maintains alignment between structure and experience.

This approach also bypasses what Jeremy Till (2009) called architecture's "illusory certainty" - its tendency to proceed as if future conditions could be accurately predicted and designed for. By accepting ongoing modification as normal rather than exceptional, fort construction acknowledges what Till termed architecture's fundamental "contingency" - its dependence on unpredictable factors beyond the designer's control.

5.3. Implications for Professional Architectural Practice

So what might professional practice learn from pillow forts? I'm not naive enough to think architecture can simply abandon its professional structures - buildings are complex technical, regulatory, and logistical challenges requiring specialized expertise that casual fort builders obviously don't possess. But there might be aspects of the integrated, adaptive approach worth selectively incorporating.

One potential application lies in participatory design methodologies. Henry Sanoff (2000) and others have advocated involving future occupants in design processes to create buildings more responsive to actual rather than assumed needs. Fort construction suggests this participation might extend beyond initial design input to include ongoing adaptation, creating what Habraken (1972) envisioned as "open building" systems where occupants maintain agency over aspects of their environment after initial construction.

Another application concerns architectural education. Schön (1985) observed that architectural education historically relied on "desk crits" - interactions where students present completed design work for instructor evaluation. Fort construction suggests potential value in what I'm calling "experiential crits" - evaluations conducted within full-scale prototypes where bodily experience directly informs design assessment. This aligns with John Dewey's (1938) advocacy for "learning by doing" - education through direct engagement rather than abstract representation.

Perhaps most provocatively, fort construction suggests reconsidering what counts as architectural expertise. Matthew Crawford (2009) argues that modern professional structures often privilege abstract knowledge over embodied understanding, potentially impoverishing both. Architecture might benefit from greater valuation of what Tim Ingold (2013) calls

"knowing from the inside" - understanding derived from direct engagement rather than theoretical abstraction.

This doesn't mean abandoning architectural expertise but expanding its definition beyond abstract design ability to include what Richard Sennett (2008) calls "craftsmanship" - the integration of thinking and making through material engagement. Fort construction, in its naive simplicity, reminds us that architecture fundamentally concerns creating environments for embodied experience - a purpose potentially served by integrating rather than separating the roles of designing, making, and inhabiting.

The profession isn't going to transform overnight. The liability issues alone would prevent that. But perhaps there's value in architecture occasionally looking outside its own boundaries for alternative models - even if those models are made of pillows and blankets.

6. Architectural Pedagogy Through Informal Construction

6.1. Rediscovering Architectural Fundamentals

Architecture school has a dirty secret: we spend most of our time designing buildings we never actually build. Donald Schön (1985) called this "paper architecture" - designing through drawings, models, and increasingly through digital representations rather than full-scale construction. While this approach efficiently teaches complex spatial concepts, it creates a weird disconnection between architectural learning and physical reality. Kenneth Frampton (1995) warns this leads to "scenographic" rather than "tectonic" architecture - design concerned primarily with visual effect rather than material reality.

This is why pillow forts are so fascinating from an educational perspective. In their naive simplicity, they offer a completely different learning pathway - one grounded in direct physical engagement rather than representational abstraction. Through this hands-on process, fort builders unconsciously rediscover architectural fundamentals that formal education sometimes buries under theoretical complexity.

Without ever reading Semper's "The Four Elements of Architecture" (1851), fort builders intuitively create structures that incorporate what he identified as architecture's essential components: the hearth (social center), the roof (shelter), the enclosure (spatial definition), and the mound (separation from the ground). They achieve what Vitruvius identified over 2,000 years ago as architecture's essential qualities: structural stability, functional utility, and visual delight. And they do this not through sophisticated technical means but through direct response to immediate spatial needs.

What makes this rediscovery educationally significant is its freedom from preconceptions about what architecture "should" be. Bernard Rudofsky shocked the architectural establishment in 1964 with his "Architecture Without Architects" exhibition, showing how non-professional building traditions often achieve sophisticated environmental responses

without formal expertise. Fort building takes this even further, suggesting that certain architectural fundamentals remain accessible through direct engagement rather than professional training.

The educational value isn't in the structural sophistication (which is minimal) or material innovation (which is non-existent), but in the clarity with which fundamental architectural purposes emerge when stripped of professional conventions. When architecture is reduced to its most basic form - creating sheltered space that supports human activities - certain priorities naturally rise to the surface.

6.2. Naïve Architecture as Critical Reflection

Beyond their educational value, pillow forts offer something even more interesting: critical perspective. Nigel Cross (1982) argues that "designerly ways of knowing" exist outside formal education, offering distinctive approaches to problem-solving that professional training might actually suppress. Fort construction exemplifies such alternative knowledge - approaches to spatial creation guided by immediate needs rather than disciplinary conventions.

This outsider perspective creates what Russian literary theorist Viktor Shklovsky (1917) called "defamiliarization" - making familiar things strange so we can see them freshly. By approaching spatial creation without architectural preconceptions, fort builders highlight aspects of spatial experience that professional practice often overlooks or subordinates. The resulting structures function as what design theorists Anthony Dunne and Fiona Raby (2013) might call "critical design" - objects that question conventional assumptions rather than just solving identified problems.

The critical potential becomes clearest in the priorities that emerge naturally in fort construction. Where professional architecture often privileges visual composition, technical sophistication, or theoretical significance, fort construction naturally prioritizes what Juhani Pallasmaa (2012) calls the "architecture of the senses" - environments that engage full-spectrum human perception rather than just visual appreciation. This focus implicitly critiques architecture's increasing tendency toward what Frampton called "scenographic" design - the prioritization of visual effect potentially at the expense of material, tactile, and social qualities.

Similarly, fort construction's comfort with impermanence implicitly challenges what Cairns and Jacobs (2014) identified as architecture's "building must stay" ideology - the assumption that buildings should persist indefinitely despite changing social and environmental conditions. By treating disassembly as normal rather than abnormal, fort construction questions the sustainability and adaptability of more permanent structures in contexts of accelerating change.

I'm not pretending fort builders are consciously engaging in architectural criticism - they're just having fun. The critical value comes not from their intentions but from their freedom from disciplinary constraints. Like the child in the emperor's new clothes fable, naive observers sometimes identify contradictions that professional conventions render invisible to insiders.

6.3. Alternative Learning Paradigms in Spatial Design

Beyond specific insights, pillow fort construction suggests alternative paradigms for architectural learning that might complement conventional education. John Dewey (1938) argued in his work on experiential education that learning happens most effectively through direct engagement with material realities rather than abstract conceptualization. Fort construction exemplifies this hands-on approach.

One possible learning model involves what I'm calling "pre-theoretical learning" - knowledge acquisition through direct experience before conceptual explanation. Developmental psychologists like Piaget (1952) and Vygotsky (1978) have shown that experiential understanding often precedes and facilitates theoretical comprehension. Architectural education might benefit from similar sequencing - letting students develop intuitive knowledge through direct spatial and material engagement before introducing theoretical frameworks to contextualize that knowledge.

This approach aligns with David Kolb's (1984) "experiential learning cycle" - the progression from concrete experience through reflective observation and abstract conceptualization to active experimentation. Conventional architectural education often begins with abstract conceptualization, potentially skipping the concrete experience that grounds subsequent learning. Fort construction suggests the value of reversing this sequence - starting with direct spatial creation and progressively introducing theory to make sense of that experience.

Another alternative involves what I'm calling "embodied learning" - educational approaches engaging the full sensorimotor system rather than primarily visual and conceptual faculties. Research in embodied cognition by people like Francisco Varela (1991) and Andy Clark (2008) suggests that cognition extends beyond the brain to include the entire body's engagement with environmental possibilities. Architectural education might benefit from greater emphasis on such embodied engagement - learning through building and inhabiting spaces rather than primarily designing them through drawings or digital models.

This approach connects with what Tim Ingold (2013) calls "knowing from the inside" - understanding acquired through direct participation rather than external observation. As architectural education increasingly relies on what Pallasmaa criticizes as "ocularcentric" media - computer models and renderings that privilege visual understanding - fort construction suggests the value of more haptic approaches: understanding space through physical construction and occupation.

Most provocatively, fort construction suggests what I'm calling "design through occupation" - spatial creation that emerges from inhabitation rather than preceding it. Jonathan Hill (2003) has noted that architectural design typically assumes linear progression from conception through construction to occupation. Fort construction inverts this sequence, with occupation and adaptation occurring simultaneously with conception and construction. This inversion suggests potential studio exercises where design emerges from occupied environments rather than preceding them.

I'm not suggesting we throw out conventional architectural education. Technical knowledge, historical understanding, and design theory remain essential. But maybe there's room for complementary approaches that engage different learning pathways. As Schön (1985) observed, architectural learning involves both technical knowledge and design judgment - the ability to make appropriate decisions in complex, indeterminate situations. Fort construction suggests that such judgment might develop not just through studio critiques and precedent studies but through direct spatial engagement - learning architecture by creating and inhabiting spaces rather than primarily representing them.

Architecture schools occasionally attempt this through full-scale construction projects, but these typically remain exceptional rather than integral to the curriculum. What if embodied spatial learning became as central to architectural education as drawing and modeling? What if the route to understanding architecture included more building and less talking about building? The pillow fort, in its humble way, suggests such alternatives might be worth exploring.

7. Conclusion

So what have I learned from spending an entire thesis analyzing something as ridiculous as pillow forts? Quite a lot, actually. Not because these structures represent architectural masterpieces (they don't), but because they reveal aspects of human-environment relationships that professional architecture sometimes forgets.

First, regarding spatial agency, I've shown how fort construction democratizes architectural expression by letting non-specialists create environments that respond to their specific needs. This democratization challenges architecture's professional monopoly without necessarily undermining its expertise. Rather, it suggests that architecture might benefit from more permeable boundaries between professional and non-professional spatial creation - acknowledging what Awan, Schneider and Till (2011) call "other ways of doing architecture" beyond conventional practice.

Second, regarding embodied knowledge, I've identified how fort builders intuitively discover fundamental architectural principles through direct material engagement. This discovery process suggests that certain architectural fundamentals remain accessible through experimentation rather than formal instruction - a finding with significant implications for architectural education. Perhaps education should complement abstract theory with direct physical engagement, allowing students to develop what Michael Polanyi (1966) called "tacit knowledge" about spatial and material behavior.

Third, regarding human-centered design, I've shown how fort construction naturally prioritizes bodily comfort, sensory richness, and ergonomic adaptability - qualities sometimes sacrificed in professional practice to formal, technical, or theoretical concerns. This prioritization suggests that architecture might benefit from more explicit attention to what Pallasmaa (2012) calls the "architecture of the senses" - environments that engage the full spectrum of human perception rather than primarily visual appreciation.

Fourth, regarding collapsed roles, I've identified how fort construction integrates design, construction, and occupancy into a continuous process rather than sequential stages. This integration enables responsive adaptation absent from conventional architectural processes, suggesting benefits in what Stewart Brand (1995) advocates as "scenario-buffered building" - environments designed for adaptation rather than fixed functionality.

I'm not naive enough to think architecture should abandon its professional structures or expertise. The technical, regulatory, and logistical complexities of building construction require specialized knowledge that casual fort builders obviously lack. What pillow fort construction offers isn't a replacement for professional practice but a provocative counterpoint - a reminder of what architecture might gain by occasionally reconsidering its fundamental premises.

Architecture loves chasing novelty and innovation, often at the expense of basic human needs. Sometimes the most valuable insights come not from inventing new approaches but from rediscovering fundamental truths. The pillow fort reminds us that architecture, at its core, isn't about stylistic movements or theoretical positions. It's about creating spaces that support human experience in all its physical, psychological, and social dimensions. This reminder feels particularly valuable now, when architectural discourse often seems more concerned with formal innovation or theoretical sophistication than with the lived experience of the people who actually inhabit buildings.

Is this a revolutionary insight? Not at all. But sometimes the most important truths are also the most obvious - so obvious we forget them. The humble pillow fort, in its naive simplicity, offers a gentle provocation to reconsider what architecture is fundamentally for: not to impress through complexity or permanence, but to create settings where life can unfold with comfort, dignity, and joy.

While writing this conclusion, I'm sitting in my own hastily constructed pillow fort (research demands sacrifices). It's structurally questionable, aesthetically indefensible, and completely temporary. But it's also remarkably comfortable, perfectly suited to my current activity, and required zero permits. There's probably a lesson in there somewhere.

8. Academic Outlook

Having spent far too much time thinking about pillow forts (my friends now worry about me), I can see several promising research directions that extend beyond this thesis. These potential avenues aren't just academic busywork - they emerge logically from what I've found and could actually contribute something useful.

First, this analysis of pillow forts as sites of non-specialist spatial agency begs comparison with other forms of DIY architecture. Future studies might look at how various forms of amateur building - from garden sheds to tiny houses, workplace cubicle personalization to festival structures - similarly bypass professional conventions to create environments responding directly to user needs. Are there consistent patterns in how non-specialists approach spatial problems? Do certain priorities or methodologies consistently emerge? Such comparative analysis might identify approaches that could inform professional practice.

Second, my identification of pillow forts as sites of intuitive structural discovery suggests empirical research possibilities into how children develop spatial understanding. Longitudinal studies might examine whether fort-building activities correlate with later spatial reasoning abilities, potentially informing early childhood education. This would build on existing developmental psychology work by Piaget and Vygotsky while specifically focusing on architectural cognition.

Third, my analysis of sensory dimensions suggests more rigorous phenomenological investigation into informal domestic spaces. Future research might employ methods from sensory ethnography (Sarah Pink has written extensively on this) to document the multi-sensory experiences of fort occupation, revealing aspects of spatial comfort applicable to more permanent contexts. This would extend architecture's ongoing "sensory turn" beyond formal buildings to include informal spatial creation.

Fourth, the collapsed roles I've identified suggest potential action research into participatory design. Future studies might develop experimental design processes where future occupants engage in full-scale spatial prototyping prior to finalized design, potentially creating buildings more responsive to embodied needs. This would extend existing participatory design approaches (like Henry Sanoff's work) while focusing specifically on direct spatial creation rather than representational participation.

Fifth, my analysis of forts as sites of architectural learning suggests pedagogical experiments within architectural education. Future research might develop and evaluate studio exercises based on principles identified in this thesis - prioritizing experiential engagement, collapsing traditional roles, and embracing continuous adaptation. Such experiments could contribute to ongoing discourse on architectural education reform.

Finally, and perhaps most interestingly, the temporal dimensions I've analyzed invite theoretical reconsideration of architecture's relationship with permanence. Future research might examine how architecture could embrace more explicit temporality - designing not just how buildings appear when completed but how they change through time, potentially increasing adaptability and reducing resource consumption. This would extend existing work on architectural adaptability (Brand, Schmidt and Austin) while focusing specifically on temporal rather than spatial flexibility.

These research directions would require methodological approaches beyond the theoretical analysis I've used here. They would likely involve empirical methods from psychology and education, ethnographic approaches from anthropology and sociology, and experimental methodologies from design research. This methodological diversity reflects architecture's inherently interdisciplinary nature - its position at the intersection of technical, social, and aesthetic concerns.

I'm under no illusions about this thesis's earth-shattering importance. But I do think the approach of examining seemingly trivial spatial practices for their architectural implications offers methodological value. Architecture as a discipline benefits from occasional defamiliarization - from looking at familiar practices through unfamiliar theoretical lenses. The humble pillow fort serves not just as a specific research subject but as an example of how architectural insight sometimes emerges from unexpected sources.

As I wrap up this thesis and dismantle my "research laboratory" (my roommates want their cushions back), I'm reminded of the simple pleasure of making space. Before architecture became professionalized, theorized, and institutionalized, it began with this fundamental human impulse - the desire to create shelter that supports specific activities and feelings. In our complex professional discussions, we sometimes lose sight of this basic purpose. Perhaps the greatest value of studying pillow forts is how clearly they reveal this essential architectural impulse in its unadorned form.

9. References

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