

LEADERSHIP
TECHNOLOGY FUTURES
ORGANIZATIONAL FUTURES
CONVICTION
RESPONSIBILITIES
ACADEMY / PRACTICE GAP
ECONOMICS & INVESTMENT

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CONTEXT: CONVICTION

This Q2 compilation of essays allowed contributors the freedom to approach a path and topic of their own choosing from one of six annual DesignIntelligence themes. They are:

1. Leadership

The Business of Design, Resilience

2. Technology Futures

Artificial Intelligence, Applied Research, Innovation

3. Organizational Futures

New Organizational Forms, Alliances, Work, Workplaces, Value Propositions & Business Models

4. Responsibilities

Global / Regional / Local, Motivations & Incentives (Group & Individual), Housing, Homelessness, Society, Civility, Income Gaps, Climate Change Dynamics, Sustainability & The Environment

5. Academy / Practice Gap

Trans industry & Transdisciplinary Collaboration, Professional Education, Development & Continual Learning, New Skills, Talent

6. Economics & Investment

Finance, fiscal responsibility, geopolitical issues

...to remain relevant and resilient.

Some chose to weave more than one theme into threads of their choosing. The common throughline in all this Quarter's offerings? *Conviction.*

With writers free to choose their own subjects, a pattern emerged that saw them tackling topics they felt strongly about. Subjects for which they had conviction.

The results of such freedom yield a diverse slate of passionate pieces and cover the full range of our six themes, from leadership to technology, from organizations to professional responsibilities, and from the academy/practice gap to economics and investment.

In addition to our regular DI contributors, we invited a stellar cast of industry thought leaders. Each has something powerful to say. Something about forces and ideas they are obviously emotional about and deal with daily, likely over years. Specifically:

Esperanza Harper, Innovation Leader at LS3P, in her article, *Embracing Responsibility*, she challenges us to enable justice, equity, diversity and inclusion - by design.

Michael Monti, Executive Director of the Association of Collegiate Schools of Architecture, in his essay, *The Promise: A Holistic, Values-Based Architectural Education*, he lays the foundation and makes a convincing case for multi-dimensional architectural education - and accountability.

Charlie Cichetti, CEO of Skema, an AI-based software solution provider, challenges readers to take hold of AI's power in his article, *Leading the Charge*.

Angela Watson, CEO of Shepley Bulfinch, a 150 year old national firm, takes us down memory lane into the firm's archives, and into the future as she explores AI's impact on communication and her firm's design process. Her segment entitled, *Communication in the AI Age* in an interesting, vulnerably shared, introspective and honest look.

Jim Anderson, CEO of Dialog Architecture in Toronto, also opens his soul in giving us an open kimono view of his own AI experiment. In *Before and After*, in pursuit of a deeper understanding of AI's leadership impact, he exposes his writing and thinking approach, and then turns the task over to AI, and shares the difference. Which is better? You decide.

And from the rollicking ranks of our regular DesignIntelligence crew of usual writing suspects, we offer:

Dave Gilmore, our president and CEO. In *Values, Worldviews and Convictions*, his decades of perspective on this triad of contexts displays his knowledge and passion for the subject.

Scott Simpson, our longest standing contributor, challenges late career and all practitioners to *Like It or Not*, when it comes to AI's influence on practice.

From the UK, Paul Hyett has forcefully penned *Time Is Running Out for Politics*, in which he points to climate change urgency, collaboration and action and asserts the need for connections between the academy, the profession and political factions.

Paul Finch follows with *Collaboration: Winners Without Losers*, a refreshing, retrospective look at Hollywood as a model for synergy.

DeeDee Birch, in her science-based study, *Neuroarchitecture as Healing Design in a Changing Climate*, connects brains, bodies and the built environment as means of facilitating climate change action.

Bob Fisher shares his interview with alternative career professional Rico Quirindongo in search of motivations to grow our impact through civil service in his article, *To Serve?*

Bob Hughes importantly grounds us by looking at the numbers in his article, *The Eagle Has Landed*, a mid-year economic review.

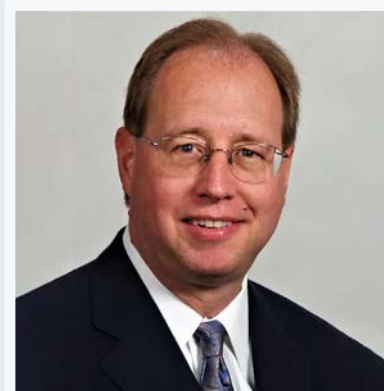
Lastly, my own written product relies on an unconventional examination of two unlikely sources in search of conviction and how to apply it. In, *The Power of Belief*, I consider college football and sports immense power to generate unified belief, and temper that with a frightening anecdote about task blindness. What do we believe in?

We hope you digest these investigations, and that they might connect some of your own convictions – and prompt commensurate actions.

Enjoy.

Michael LeFevre, managing editor

“ With writers free to choose their own subjects, a pattern emerged that saw them tackling topics they felt strongly about. Subjects for which they had conviction. ”



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VALUES, WORLDVIEWS AND CONVICTIONS

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VALUES, WORLDVIEWS AND CONVICTIONS

Dave Gilmore

President and CEO
of DesignIntelligence

Dave Gilmore explores a trilogy of contexts.

Values

We humans are a complex assemblage of values. Values are those internal compasses, seemingly imperceptible, that direct the living of our lives. They're formed and fashioned over time by several dynamics. Our families of origin bore a significant influence on how our values were formed. How language was used, what customs were maintained, the observed interaction between our parents, siblings and others all contributed to how our values became a part of our lives.

But what are values? Values are those things we hold precious. They are what we guard and care for. Values are where we run to when trouble strikes. Ultimately, values are what we live for and will give our lives for. So often, these kinds of meaningful themes operate in the unconscious backdrops of our lives that we're often unaware of how they define us and how their expressions form others' opinions and judgments of us.

Our values are replete with biases gathered over time by life's shaping moments. We all desire to distance ourselves from negative, hurtful biases, but the human condition seems destined to accumulate biases like the sticker burrs that cling to our pant legs when we walk through a field. Only when we remain vigilant to debias our thinking, speaking

and behavior do we gain positive ground. Debiasing is a discipline, not a singular, one-time choice. Regular assessments of how we react and respond, the language we use, how that language is deployed and how our actions manifest themselves in day-to-day human interaction and follow-on corrections mitigate the bias accumulation common to us all.

Knowing this, we can positively, hopefully alter our values by the choices we make, coupled with conscious, disciplined assessment and correction. One wise man (Paul of Tarsus), said long ago, “Be transformed by the renewing of your mind.” Transformation ultimately requires renewal in how we think, how we speak and, finally, how we behave.

Worldviews

Your worldview, or how you view the world, is the lens that focuses our values, lives and living experiences. That philosophy (aka worldview) is born of your values and sets the context through which you respond to just about everything.

For instance, if a person’s values are centered on relationship health, this sets the frame and focus for how they interact with the world. This is not limited to human interaction. If the philosophy of healthy relationships is unrestricted, this would naturally include one’s relationship with life’s broader context, including Planet Earth. A positive relationship with the planet would include caring and careful observation of the Earth overall, as well as the proximity of planetary life in your day-to-day life. Worldview is a powerful context, one far too often unacknowledged and misunderstood.

Much of my career has been dedicated to business mergers and acquisitions, opportunity assembly and negotiation. My success in these realms has largely been centered around this core theme of worldview. When interacting with others in relational contexts toward an eventual transaction, understanding their worldview clarifies the motives they bring to the negotiation. Such perspective removes the transactional nature and repositions the interaction as wholly human and personal. Pursuing an understanding of other’s worldviews is essential to advancing win-win outcomes in human interactions.

“
If you are convinced of something,
I can most likely unconvince you of
it, but if you hold deep convictions
about something, you can rarely be
moved from your position.
”

Convictions

Conviction is a strange and often misused term, with multiple meanings. More often than not, it's used in a legal application. In that way, Oxford's definition tells us conviction means "a formal declaration that someone is guilty of a criminal offense, made by the verdict of a jury or the decision of a judge in a court of law."

But conviction has another definition. Per Oxford, it can also mean "a firmly held belief or opinion." This is the definition I'll use and apply here. From values to worldview to convictions, this threefold cascade of one's deepest self, our most meaningful expressions come to the fore and shape how we live.

I have often said if you are convinced of something, I can most likely unconvince you of it, but if you hold deep convictions about something, you can rarely be moved from your position. One's biases can support one's convictions, which can result in possibly negative and aberrant outcomes. But your deep convictions are what usually result in transformative outcomes. The rightness or wrongness of such results must be judged in the larger context of overall society as planetary citizens.

Meaning and Action

Each of us has a core set of values, worldviews and convictions through which we encounter life and living. It's within this triumvirate of contexts that we encourage each of you to assess your positions. The future of the design professions as individuals, teams, firms and as a whole – with all their promise of value – is best fulfilled when we operate out of authenticity and relational well-being. Design's power is greatest when viewed by designers who see the world as positive, with high potential, who strive for equal opportunity and to optimize outcomes that raise the human condition and responsible planetary possibilities in complementary ways.

How will you lean into your convictions?

How will you be the change you desire?

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Dave Gilmore is the president and CEO of DesignIntelligence.



THE POWER OF BELIEF: WHAT WILL WE DO WITH IT?

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THE POWER OF BELIEF: WHAT WILL WE DO WITH IT?

Michael LeFevre

Managing Editor, DesignIntelligence

DI's managing editor looks at unconventional sources in search of conviction.

In 2023 I came to an understanding of one of the world's most powerful forces: the power of belief. Yes, I've come to understand that this power is one of the most amazing forces in the world. With your permission, I'd like to share this understanding. To build common ground, I'll start with some self-disclosure: I'm a University of Michigan football fan. I earned two degrees there, taught there, served on the alumni board there, tried out for the hockey team there and our daughter got her master's degree there. I love the place unabashedly. It served me well in providing an education, a community and a cause I believe in. In my case, that cause was architecture – or shaping the built environment. In the 2023 season the Michigan football team achieved great heights. In January 2024, they won the national championship, the pinnacle of their sport, after an undefeated season. Much has been written about their journey and an analysis of it holds the potential to enlighten and activate leaders, people like us: designers, builders and operators of the built environment.

The Cult

During the fall 2023 football season, the Washington Post published an essay entitled, "I've been brainwashed by the most powerful cult ever: Michigan football" (<https://www.nytimes.com/2023/12/31/opinion/michigan-football-rose-bowl.html?mwgrp=c-mbar&smid=em-share>.)

Reading this article caused a friend to comment, “This is a cult!” My response? Darn right (per the Washington Post!), and I’m a proud member. Concurrently, another friend forwarded me the same article along with his observation: “Perhaps this is what it feels like to be in a powerful, all-consuming religious or political cult?” I’m quite sure he was right – because I’ve lived it.

Adversity Solidifies Belief

In this storybook year for the Michigan football team, its journey and its followers came under attack for a series of scandals, each of which has been brought into focus by non-members of the Michigan football “cult.” These allegations suggest that technical lines may have been crossed, including a rogue staff aide named Connor Stallions who surreptitiously filmed opponents’ signs; a recruiting “violation,” namely buying a potential recruit a hamburger at lunch; and other offenses. Only time will tell the degree of these violations. The sign-stealing rule has since been eliminated by the NCAA in favor of wireless helmet communication. Nevertheless, the players did not commit them and remained dedicated to their cause. Suspension of the team’s head coach, Jim Harbaugh, followed.

Through all these challenges, the team prevailed, because each of these obstacles only brought them closer. Simply put, because of their belief in their common mission, these challenges served to build strength and unity among the team and strengthen their conviction. They continued to win against all odds.

As evidence of the power of their common belief, in countless interviews throughout the year, to a person, the players and coaches spouted the same mantras:

“Q: Who’s got it better than us? A: Nobody!”
“Attack each day with an enthusiasm unknown to mankind!”
“Just get better tomorrow than we were today!”
“Michigan versus Everybody!”
“Michigan versus the World!”

These clichéd slogans became clear representations of the team’s common belief in one another and in their mission. As someone who thinks for a living, I bemoan their mindless, repetitive simplicity while simultaneously marveling at their power.

The Michigan coach has long been acknowledged as quirky and flaky, but the fact is, in his creation of a common belief through these sayings and his actions, he is effective. A leader. And he finally turned the tide, slaying the demons of SEC football by defeating the likes of the Alabama dynasty and sending his team and their followers to the highest level, to the delight of thousands of followers worldwide.

When I observe interviews with Coach Harbaugh, despite my own deep belief in the team, the program and the culture, his responses cause me to wonder: Is this man even possible of conceiving an original thought, or does he simply regurgitate football clichés?

But it doesn’t seem to matter. The power of the common belief he created and instilled among his culture and his charges, and the millions of alumni followers, is immense and frightening. In parallel ways, it’s akin to the more serious beliefs held by soldiers who fight for our freedom. Such belief yields more than articulating a common cause. It induces young people in their prime to work, exercise and devote their lives to their cause. Granted, successful realization of the belief comes with giant rewards for some through name, image and likeness (NIL) fortune and fame. It can help propel athletes to the next professional levels. For those who care, even to prominence in national media. The TV and media money that drives these entertainment industries is scary indeed. So is the allure of lucrative, life-changing NFL contracts for a few top draft picks that emerge from the college ranks. Such outcomes change the lives of those who achieve them. They enable players to buy homes for their parents, who in many cases raised them in single-parent households. It also helps them realize the trappings of the rich. Many choose to give back generously and use their power and fortunes for good. Sadly, just as many squander their success, ending up penniless despite it all.

The built environment professions should be so lucky as to wield so much capital and use it for good purposes. But truth be told, we do wield much money and power – 40% of the world’s GDP, they say. It’s just that too often we misdirect it and forget to deploy it collectively for greater impact. Perhaps we are less effective in our creation of belief and conviction?

Since winning the championship, to no surprise, Coach Harbaugh has moved on to a new position in the NFL. Having achieved his mission, he is driven to create new belief and conviction at the professional level. He is, it seems, a man driven by creating conviction and belief. Are we?

The dark side of these kinds of strong belief systems is that they can be directed for evil purposes. To my friends' question of cults, we find evidence in certain political factions in modern times, in World War II and in plenty of other religious and political regimes. The message? Believer beware! Be careful what you believe in.

Dismissing Sports Analogies?

Many of you may have already disregarded this piece because the idea of football turns you off.

Scholarly types regularly disdain the topic as boorish. After all, who cares about a bunch of Neanderthal brutes trying to maim each other on the football field? It's only a game. What can possibly be the value of people, passionate believers all, spouting ridiculous rallying cries such as:

- "Hoddy Toddy, Great God Almighty" (Mississippi).
- "Go Blue" (Michigan).¹
- "Roll Tide" (Alabama).
- "Hook 'Em Horns" (Texas).
- "Sic 'Em Dawgs" (Georgia).
- (insert your school or organization here, proudly).

True, football is only a diversion, but its power to unite through common belief is informative. Acknowledging the great power of such data-compressed, loyalty-identifying slogans, perhaps we design and build leaders would do well to consider some similar mantras of our own to generate momentum? There is no question that we all already believe in architecture. We are in the grip of its cult. We live it and love it. But what often fuels that belief is the drive to change the profession for the better, along with its value proposition for our clients, constituents and selves. We see architecture so clearly. To us, its power is so obvious. Why don't others see it as we do? To understand why, I offer a more scholarly, yet still-frightening personal anecdote.

The Gorilla in the Room: Task Blindness

For you football doubters, skeptics and dismissers, let's look at another line of reasoning: the power of task blindness or task bias. Some 15 years ago, I attended the opening plenary session of the Society for College and University Planning's national conference in Denver. Also, in attendance were some 5,000 master's degree- and Ph.D.-holding educators, administrators and policymakers, along with architects and builders, America's leadership in shaping and creating environments for institutions of higher learning. All incredibly smart people dedicated to a noble higher cause. Our plenary speaker that day gave us an assignment in his opening talk: Watch a short video and count the number of times that the team in white T-shirts (playing in a small elevator lobby) passed a basketball back-and-forth. The video played. "How many did you count?" asked our speaker. "25 ... 23 ... 27," came the answers. "The correct answer was 27," he explained. "But how many of you saw the man in the gorilla suit?" he asked.

Watch the video here at the Invisible Gorilla Experiment, University of Utah.

<https://www.ksl.com/article/15204008/the-invisible-gorilla-reveals-human-brain-capacity>.

When the crowd stirred and rumbled in disbelief, denying his claim, he reiterated his statement. "Yes, in fact, during the brief video you just watched, a man dressed in a gorilla suit, walked across the screen, stopped in the middle of the frame, beat his chest and exited the frame." So, what's the problem? The problem is that we *didn't see it*. We were so focused on our task (looking for people in white T-shirts passing basketballs) that we didn't even *see* the dark man in the gorilla suit. Shocking. Frightening. All of us highly educated, highly confident leaders in the room – thousands of us – would have argued that this never happened. Yet it did. And after a few post-presentation cocktails, we did in fact argue and discuss this different understanding of the same reality and how frightening it had been. Before he showed us the proof, a few of us might even have been willing (fueled by those cocktails) to step outside and resolve the dispute physically. Fortunately, we did not. We had fallen victim to task blindness, being so over-focused on our end goal that we had blurred our own senses and abilities to receive and process sensory information with clarity and accuracy.

“
If, as leaders, we can convince ourselves and our followers of our common cause and its righteousness, we can accomplish damn near anything.”

Dedicated to our lives' work designing and building facilities for higher education and our own paradigms, life experiences, education, beliefs and confidence levels, we believed what we saw. We believed it to be factual. These were *facts* (so we thought), data entered into our minds. We saw them with our own eyes. We *processed* them. They were *true*. There was no other *possible* answer. But we were *wrong*. The frightening part about the power of belief is to consider how often – in our world of extreme polar political discourse and an ever-complex universe of data to process and understand – do we take in data and believe it when it is wrong? Consider this in the context of our current media and political climate.

Quite often I'm afraid we don't take the time to listen, look and process more thoroughly. When we don't take the time to question or are compelled by automatic filters, being driven by focus or task blindness, we forget to even consider the perspective of others – others whom we may be dismissing solely by our default biases as absolutely incorrect.

Questions

At this point you might ask: What do these personal anecdotes have to do with the mission of DesignIntelligence and yours as design and construction leaders? Only this: They demonstrate the power of belief. If, as leaders, we can convince ourselves and our followers of our common cause and its righteousness, we can accomplish damn near anything.

All of it makes me wonder, in our task-blinded love for architecture and the built environment, are we missing the point? Perhaps we should learn to look and listen to a broader set of influences to be more effective in convincing our clients, partners and constituents to love design as we do and achieve a nobler set of outcomes?

If so, the questions become:

- What *do* we believe?
- What *will* we do with such immense powers?
- What *can* we accomplish together?
- *Can* we write the wrongs of the past centuries of the design and construction professions?

Specifically:

1. Can we continue to reshape a profession that has been embarrassingly low in diversity, equity and inclusion? Current leaders are making great strides as women are being elected president of the AIA and their own firms, but can they move us beyond awareness and having a seat at the table to true action and results? We all hope so. We men have had our turn. It's time for new leadership and belief.
2. Can we use the power of belief to define the roles for our profession? Roles that transform mere ego fulfillment, and form making of art and sculpture for the luxury class to achieve real impact for the less fortunate.
3. Can we reduce our impact on the planet?
4. Can we transform our profession to become a desirable and more diverse one to continue to attract the kind of passionate professionals we need? A profession which offers value, return, profit, and rewarding roles to all and changes it from being long hours, and not enough time with our families for too little reward.

By harnessing the power of belief, I believe we can.

The questions remain.

As leaders, what do we believe in and what will we do about it?

On Conviction

Like the legions of long-suffering fans who continue to believe and follow their beloved sports teams through heartbreak and disappointment for decades, this essay's success relies on conviction, the power of belief and the commitment to act upon it.

In the design and construction professions, leadership is about creating and instilling conviction among your firms, teams and those who work within them.

But how do we go about it? Such long-held, powerful beliefs are not arrived at quickly or easily. In sports, followers of baseball teams such as the Chicago Cubs, who live and die by their hometown heroes, have been indoctrinated over years by family and friends. Followers of soccer clubs in La Liga or Wrexham go to great extremes over years to support their teams. Taken to another extreme, political and religious beliefs are used to justify wars among countries. These beliefs are passed down over generations and centuries among families. Perhaps the convictions we should follow in the working world fall somewhere between these extremes. Passionate belief in a design direction or a set of firm values is important, but not a matter of life and death. Still, we earn our livelihoods and devote ourselves to our beliefs in the work we do. It gives us meaning, brings bread to our table and serves society in significant ways. But how do we accelerate building these beliefs when we don't have decades? By leading, building culture and enlisting the whole organization.

“The worst speech you ever give will be better than the one you never give.”

- Peter Millar

So speak up. Care enough to share. Even my simple act of putting these words “on paper” is an example. Even at the risk of being incorrect, imprecise, ineloquent or indelicate, my decision to share these words demonstrates my conviction. I didn't always have this conviction. For years, I was too timid, too busy or too something. Now, it's my job to write and speak through my writing, but it's only my job because I chose to take it on. I had the conviction to believe and to act. As a leader, creating conviction is your job too. But how? I may be a white male from the Midwest working alongside a woman of color, born in Asia, practicing the religion of Islam. Clearly, we are two people of different backgrounds, but we likely use our diversity to become richer and better in the workplace. But only if we share common convictions about that work. Are we trying to do the same thing? Do we believe in it, love it, hope for it, and are willing to work passionately for it? If so, with those common convictions, we will do great things together.

Leaders know how to create those common beliefs and convictions. They practice them themselves. They lead by example and are skilled at speaking and writing about their beliefs as they share them with others. Do you?

Perhaps we can learn from those who toil on playing fields in our quests to instill the powers of belief, hope, and faith in our teams at work. How wonderful and powerful it is when we can harness such common belief, common values and trust in one another - even approaching cult-like conditions - in our organizations. We simply must have conviction in the “right” things.

Perhaps our beliefs and sayings won't be as simple as those of a football team. Certainly, they will be different for each of us. But I remain in awe of the power of such beliefs and the conviction to act upon them as I continue my search for commensurate actions.

Do you believe? In what? Here's to trying, to believing ... and to doing. Because, far beyond having beliefs, practice - and life - are about having the conviction to do something about those beliefs.

¹The power of these sayings is pervasive and international. On a recent trip to Spain, I wore a packback emblazoned with Michigan's block M logo. A man behind me enthusiastically proclaimed: "Vamos Azul!"

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LIKE IT OR NOT ...

DesignIntelligence®
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April 2024



LIKE IT OR NOT ...

Scott Simpson

Senior Fellow, Design Futures Council

Reflections on AI and Design

Everywhere you look, AI is in the news. There is no shortage of prognostications of its likely impact on economics, politics and society at large. Promise or peril? Some envision that AI will change the world for the better in astonishing ways, and others fear that AI will eventually turn us into mere pets of our computer masters. The scenarios on both sides are entertaining, but like most predictions rendered with certainty, they are very likely to be wrong. While humans may be very good at imagining the future, they are very bad at actually predicting it.

AI is the natural outgrowth of earlier, much less powerful computer systems, and it will take a huge leap forward when quantum computing achieves commercial scale (which is only a matter of time). In many ways, the landscape has already been irrevocably altered. An obvious example is that spending habits have shifted to the degree that only about 10% of all transactions are handled on a cash basis. The rest are fully automated, so everything we buy is tracked electronically. The result is a huge amount of data that can be used to predict spending patterns, which in turn can help manage the supply chain. If you buy a book on Amazon or a movie on Netflix, algorithms predict with unsettling accuracy what your next purchase is likely to be and make sure those temptations pop up on your screen at just the right moment.

Our cellphones already know who we talk to and for how long, when we go places and where to, what kind of information we seek on the internet, where and what we eat, and so forth. Cellphones have permeated our lives to the degree that they have even replaced the need for office space, as we can conduct business from just about any location at any time of the day via email, Zoom, text (and even voice!). This is truly amazing when we realize the iPhone is just a teenager (it was invented in 2007, a mere 17 years ago). If past is prologue, it does not take much imagination to envision that in another 17 years, we will be living in a ubiquitous-electronic universe with access to unlimited amounts of data, one that has been entirely invented by clever humans.

All technology can be used for good or ill. If anyone doubts this, consider Alfred Nobel, the inventor of dynamite. Legend has it that one day, over his morning coffee, he opened the newspaper to read his own obituary, which described him as a rather unsavory character who invented the greatest destructive force known to man. Fortunately for him, the obituary was a mistake (it was actually his brother who had died), but it did inspire Nobel to devote the remainder of his life to good works, such as establishing the Nobel Prizes. Hence, when the legitimate occasion for his obituary presented itself, he was rendered in a much more sympathetic light.

The same potential for good and evil pertains to just about everything, from firearms to petroleum refining to nuclear energy. Even water in excess quantity can cause deadly and destructive floods. So, the question for AI is not whether it will be used for good or ill (the answer is yes in both cases) but how, as the humans who invented it in the first place, we will manage it to get more of the former and less of the latter.

This is where design comes in. People have always been dissatisfied with the status quo, constantly seeking ways to improve their environments. We create structures of all kinds to make this happen, from roads, bridges and dams to buildings of all shapes, sizes and functions. Design is the process by which we move from the current state to a new, more desirable future state. Design thinking can be applied to a wide range of human endeavors, creating both objects and processes along the way. In short, if we can imagine it, we can achieve it.

“

The “thing” about AI is that it’s not a thing at all. It’s basically a big jumble of overlapping computer programs with embedded algorithms that are linked to create larger and more powerful systems. Think of those many programs and algorithms like synapses in the brain. The more of them we have, and the more links we create, the more powerful our thought processes become.

”

As our newest and most sophisticated tool, AI can be of enormous value, but it's just a tool, like the flint that early cavemen used to spark fire. It will enable designers to greatly improve both the speed and the quality of their explorations. AI will enable the documentation of design intent to be much more accessible and accurate. And when applied to the supply chain, the manufacturing process and the construction site, it will enable projects to be delivered at much higher quality and lower cost. The potential is certainly there, but the potential will not be realized unless AI is put to use in a truly thoughtful way.

The “thing” about AI is that it's not a thing at all. It's basically a big jumble of overlapping computer programs with embedded algorithms that are linked to create larger and more powerful systems. Think of those many programs and algorithms like synapses in the brain. The more of them we have, and the more links we create, the more powerful our thought processes become. AI is no different in concept or execution. By building AI, we are in essence building a bigger collective brain that can be accessed by billions of people simultaneously.

A great analogy is the “invention” of human language. It was language that enabled humans to communicate with each other and thus undertake much more complex and difficult tasks that could not have been achieved without broad-based cooperation. Yet no one person created language. Who invented the pronoun or the preposition? Everyone and no one. Language results from the cumulative effort of many thousands of people over many thousands of years. In fact, it is estimated that there are currently 7,117 languages in the world today (700 of which exist in New York City alone). The internet, and its newest offspring AI, operate very much like that.

That is why AI is inevitable. It is built upon a network of networks – tens of millions of computers connected to the internet, interwoven with multiple redundancies. It does not come equipped with an on/off switch. We are like a teenager who has been given the keys to Dad's Ferrari. It's a sophisticated machine, to be sure, and we need to figure out how to drive it.

Our biggest failure will be in not learning how.

Scott Simpson is a regular contributor to DesignIntelligence and a senior fellow in the Design Futures Council.



TIME IS RUNNING OUT FOR POLITICS

DesignIntelligence®
MEDIA
June 2024



TIME IS RUNNING OUT FOR POLITICS

Paul Hyett

Co-founder of Vickery Hyett Architects

Paul Hyett points to climate change urgency, collaboration and action.

For several weeks I have been making tiny adjustments to our grandfather clock. A threaded wheel permits me to raise or lower the bob and, through trial and error, I have brought the clock's timekeeping across seven days to within a minute of Greenwich Mean Time.

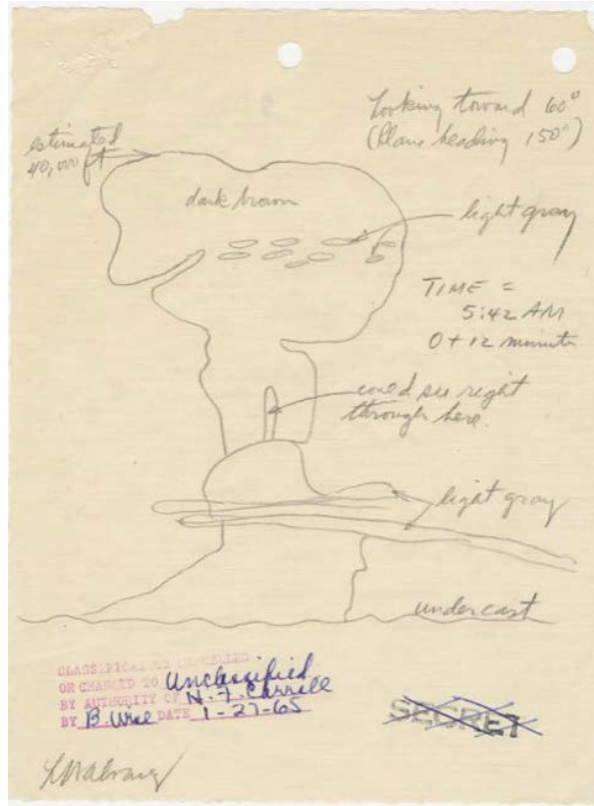
“ _____

Metaphorically speaking, we stand at a nanosecond to midnight: the “tipping point” of irreversible climate change induced by man-made carbon emissions.

_____”

Like time, space is limitless. Ultimately, in its vastness, it is also measured in units of time. The BBC's "Sky at Night" tells us we can currently see the universe up to a "distance corresponding to a light-travel time of 13.8 billion years". At that scale, interval and distance have no meaningful boundaries.

It is against these infinities that our current shared experience is so extraordinary. Never, in the 50,000 years of its history, has humankind lived with the ongoing threat of self-destruction. That dreadful prospect started at the Jornada del Muerto valley – translated as "Dead Man's Journey". There, in New Mexico, at 5:29 am local time on 16 July 1945, the first atom bomb was detonated. An eyewitness account and sketch of that moment is shown below:



(For a video, see: <https://youtu.be/7dfK9G7UDok?si=YFnbtxlc6-AgbS-V.>)

Concurrent with that grimmest of ongoing threats, we now also live with the certain knowledge of another, less easily preventable catastrophe. Metaphorically speaking, we stand at a nanosecond to midnight: the "tipping point" of irreversible climate change induced by man-made carbon emissions. Like lemmings, humanity continues to stampede towards calamity because our national and international social, economic and political systems are too crude to deal with the problem.

Despite the enormity of these threats, the world will not stop spinning and time will continue to pass even if, through our destructive actions, all clocks stop. In such awful circumstances flora and fauna, with the kind of resilience that astonished the scientists after the Chernobyl disaster, would surely adjust and no doubt eventually come to flourish once more.

However, humanity's capacity to make it through changes of such magnitude is under far greater question. Witness the four Mad Max films for a vivid illustration of the likely, terrifying consequences of societal collapse and ecocide, as illustrated in the image below.



Author image, generated via artificial intelligence software

The only hope in terms of averting such a disastrous future is through cooperation and leadership at national and at international levels. Sadly, with the cleavage between the right and left of politics ever widening, reconciling interest groups within the democracies is becoming hopeless, and constructive dialogue with the dictatorships remains all but impossible. Meanwhile, temperatures around the world continue to rise, physically and metaphorically.

Against that depressing background, designers – whether they be involved in built infrastructure, transportation or any other aspect of product manufacturing – must continue in their efforts to develop and offer responsible solutions that will enable people everywhere to go about their lives in an ecologically sustainable manner. To achieve that, we need *design intelligence* to be applied to every area of human activity.

Neither our politicians nor our political systems are remotely up to this task. Thankfully, time will soon clear the decks, and a new generation of younger and assuredly better politicians and party organisations will emerge. As designers and thought leaders, our duty is to ensure they are properly informed and equipped as necessary to construct the regulatory frameworks that will effectively facilitate the transition to 100% eco-sustainable living.

Societies have faced and managed major threats before. Bubonic, pneumonic and septicaemic plagues as well as cholera and, more recently, COVID-19 were ultimately controlled through coordinated improvements to medical practice (science), personal hygiene (education) and sanitation and air-conditioning (building). Indeed, it is through science and technology that we have been able to harness ever cleaner and infinitely abundant power sources. But whilst we still have a long way to go in that respect, as William McDonough and Michael Braungart revealed in their brilliant book subtitled “Remaking the Way We Make Things”, we have yet to really start in terms of securing clean “Cradle to Cradle” sourcing, materials and component use within manufacturing processes.

In all these efforts, design matters, but the key here is that science and technology must inform our design responses.

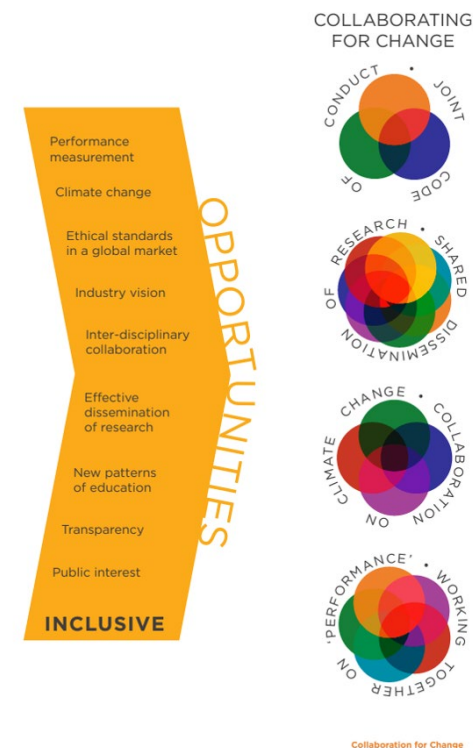
Universities and institutions such as the RIBA and RICS within the U.K., the AIA in the U.S. and their counterparts around the world must further grow their major roles in initiating funding and carrying out research.

Increasingly, other specialist organisations such as DesignIntelligence are required to provide their invaluable service in connecting the dots, hosting and coordinating secondary and tertiary levels of research, and lobbying and sharing the results with government, corporations and other institutions.

One group currently working in this way is the Edge, a think tank operating within the U.K. construction industry. Established in 1995 by Jack Zunz, then chair of the Ove Arup Foundation (and earlier, chief structural engineer for Jørn Utzon’s Sydney Opera House), its mandate is to better connect the professional institutions working within the construction industry in their efforts to develop, promote and put to proper use the results of research around policies, issues and ideas.

In 2015, the Edge published a report authored by my friend Paul Morrell entitled “Collaboration for Change.” It focused on the future of professionalism within the construction industry. A summary of that report’s recommendations was provided under the four headings:

- i. Ethics and the public interest.
- ii. Education, competence, and the development of a body of knowledge.
- iii. Institutional organisation and the relationship with government.
- iv. Collaboration on strategic interests. (This was subdivided into: industry reform, climate change and building performance.)



(Access the report here: https://edgedebate.com/s/CollaborationForChange_Book_Ed2-Final.pdf) The diagrams show the transition from exclusive to inclusive cultures – aspects of the report’s recommendations.

In his summary, Morrell rightly claims if the report’s proposal were implemented, “the result would be a better world.”

Critically, if we cannot quickly influence our governments to enforce the better design that will enable us to live sustainably and in harmony with our planet, governments around the world will be overwhelmed by the catastrophic consequences of such failure. We already see their inability to cope with the harvest failures and the barren lands – consequent on the lifestyles of the developed nations – that force developing communities to abandon their homelands in the tens of thousands. Unless governments unite and act to avert the causes, the scale of these migrations will escalate exponentially. For example, 40% of Bangladesh’s 170 million population will be impacted by the currently predicted sea levels just a few decades away.



Industrialized nations’ generated rising sea levels’ anticipated impact on developing Bangladesh.

So, what of Amsterdam? Or London? Or New York, which is currently embarking on \$4 billion of sea defence construction. There, sea levels have risen nine inches in my lifetime and are projected to rise between eight and 30 inches by 2050, up to 75 inches – that is over six feet – by the turn of the next century. That will be within my granddaughter’s lifetime!

The following platforms are especially informative in this respect. The first allows property-owning Americans to punch in their post codes and see the impact of climate change on their assets. There is no comfort there; the problem belongs to us all:

https://riskfactor.com/?redirect=true&from=floodiq.com%2F&utm_source=floodfactor.

The second, a paper entitled “Global Investment Costs for Coastal Defence Through the 21st Century,” makes for especially chilling reading in its projections. Clearly, the costs of sea defences (which only wealthier countries will be able to afford) will, in continuing to escalate, ultimately threaten parity with national defence budgets. Annual flood defence infrastructure costs in the U.K. stood at \$1.36 billion in 2021 – up 36% in three years to reach over 2% of the U.K.’s national defence spending. You can access that paper here:

https://www.greenpolicyplatform.org/sites/default/files/downloads/resource/Nicholls_Global_Investment_Costs_Coastal_Defence_Through_21st_Century.pdf.

Only the professions, academia and industry can inform the actions necessary to curtail this unsustainable escalation in flood defence costs with joined-up thinking. The bottom line for the construction sector is this: It is essential that the institutes that represent our professions work more purposefully with the manufacturing and delivery sides of industry and with university research departments in imagining and testing new and better ways in which we can make and operate our buildings and our cities. That work must be shared widely, at home and abroad, to inform government regulation and incentivisation across the globe. Such work must be mirrored by product designers and manufacturers in all other industries.

In parallel, public opinion must be enlightened so that it accepts, even demands, the government initiatives and constraints that will deliver the more ecologically sustainable design outcomes our industry and parallel industries are so capable of providing. This involves social engineering at the mega scale, something Libertarians abhor. The specialist journals and the general media have a big role here too, but they must understand that truth matters, and that the nonsense of conspiracy theories must be swept aside. In short, they (particularly the likes of the seemingly incorrigible Tucker Carlson) must grow up, get serious and get onside.

At the macro scale, none of this is important. We are but a fragment of a tiny corner of a small swirling galaxy lost in an eternity of universes. And we live in only one moment of the limitless unfolding of time. But as we know all too well, we owe it to our children and our children's children to try and succeed. And my grandfather clock just chimed again.

Paul Hyett is co-founder of Vickery Hyett Architects, past president of the RIBA, senior fellow of the Design Futures Council and a regular contributor to DesignIntelligence.



COLLABORATION: WINNERS WITHOUT LOSERS

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MEDIA
April 2024



COLLABORATION: WINNERS WITHOUT LOSERS

Paul Finch

Programme director of the
World Architecture Festival

Paul Finch visits Hollywood to examine the creative process.

Collaboration is an odd word. It has overtones of defeat and an unholy alliance with conquerors – for example, what happened in France after the successful German invasion in 1940. The opposite of collaboration at that time was resistance, admirable in those historical circumstances, but this word today has overtones of a stubborn refusal to listen to reason.

Collaboration has happier connotations in relation to the world of architecture and construction. What, after all, can be achieved without a large degree of collaboration, even in respect of modest projects? Very little, but the subject of collaboration and the creation of effective teams is not discussed as much as it probably should be – where, for example, is the methodology to determine whether what you view as a successful, collaborative team is really working as it should be?

One answer would be: “a successful outcome.” The problem is that by the time the outcome has been delivered, it is too late to do anything about elements of the collaboration that failed early in the design and/or construction process.

It is tempting to make comparisons with the world of filmmaking in thinking about how buildings are created, even though the parallels between the parties involved are not exact. The film producer is generally both client and financier, but unlike a real estate investor or other building client, they will have their own collaborations to worry about, notably distribution.

The director might be regarded as the architect in this scenario but might be working with a screenplay they have not written; the programme, therefore, may be more complex (or different) to the narrative produced by another hand. The obvious example is an adaptation of a novel or play, where the director's intentions are quite separate from the narrative and characters provided. Hence the temptation to make changes – in the case of any Shakespeare play turned into film, I always look for the line “with additional dialogue by ...” in the credits.

My favourite example of the collaboration which should have gone wrong but didn't is Max Reinhardt's 1935 “A Midsummer Night's Dream,” for Warner Brothers, which included stars such as Dick Powell, James Cagney, Mickey Rooney as Puck, comic genius Joe E. Brown and Olivia de Havilland, making her film debut.

I confess to looking up Wikipedia to remind myself of some of the things that went wrong:

Max Reinhardt did not speak English at the time of the film's production. He instead gave orders to the actors and crew in Austrian German while fellow refugee and longtime Reinhardt collaborator William Dieterle acted as his interpreter.

The shooting schedule had to be rearranged after Mickey Rooney broke his leg while tobogganing. Since the production was too expensive to be delayed, Rooney's remaining scenes had to be shot with a stand-in for the running and elfin sequences. Foliage had to be used to conceal his broken leg, as well as holes in the floor to complete Rooney's scenes. According to Rooney's memoirs, Jack L. Warner was furious and said he wanted to kill Rooney, bring him back to life, and then break his other leg.

The innovative use of cellophane to create fairyland images was an expensive risk which worked, but a misunderstanding about the film led to massive cancellations by distributors across the U.S., while in Germany the film was banned by Goebbels, partly because Reinhardt was Jewish and partly because he regarded the film as an example of German expressionism and, thus, “degenerate art.” An example of resistance, perhaps. It is a great film, despite the miscasting of Dick Powell, and well worth seeing at its original length, a modest 132 minutes. And what a collaboration!

I am also indebted to the British architect Ian Ritchie, in an exchange on collaboration, to get another reminder, this time from his 1994 book “(Well) Connected Architecture.” He defined the crucial ingredients for successful collaboration as follows:

- Each must take time to listen to the other and suspend prejudices. Not only does this allow mutual respect to grow, but without it, the synergy of mutual creativity cannot flourish: the process, like brainstorming, in which nobody can quite remember where the solution came from.
- The commonality of aims is usefully complemented by a diversity of expertise.
- No barriers = no defences. There are those who feel threatened when another profession speaks their language and questions their assumption. [It is a shame we have these languages and hide behind them at times.] This is inhibiting to any free exchange.

These principles of collaboration apply at all stages of a project – initially with a client, and later with a builder or fabricator. Differences of orientation can generate conflict or can be harnessed creatively. The trick to helping this process move in a constructive direction is often found by sticking rigorously to an open-minded approach where everyone's preconceptions – especially our own – are questioned, and we demonstrate a willingness to receive the ideas of others and modify our own, while at the same time refusing to compromise our design principles and values. Those ideas that survive this process of challenge are stronger for having stood up to scrutiny, and the process is exciting.


Ritchie's "10 Commandments of Collaboration" still apply and are as follows:

- *We will begin without preconception or prejudice.*
- *We take nothing for granted except your commitment to the project.*
- *We know how to listen but are ready to question and to be interrupted.*
- *Ideas are shared – no one can claim them afterwards. Everyone owns the problems, but nobody owns the solutions.*
- *We recognize the project as a mediator, which helps resolve differences of view.*
- *We respect the minds of our collaborators.*
- *There is time together (synthetic thinking and action) and time apart (reflection).*
- *All participants are equal, there are no bosses.*
- *We respect the common concept – collective idea – as being more important than what any individual could have conceived.*
- *We are prepared to improvise and side-step conventional ways of doing things.*

These rules are as apt today as when they were written 30 years ago. The only thing missing is advice on how to create collaborative teams that are likely to succeed and who should be responsible for this (or is this itself a collaborative effort?). As with Jack L. Warner, you have to start somewhere, and Max Reinhardt was the choice. And he was working with Shakespeare.

“
The trick to ... move in a constructive direction is often found by sticking rigorously to an open-minded approach where everyone's preconceptions — especially our own — are questioned.
”

Paul Finch is the programme director of the World Architecture Festival.



COMMUNICATION IN THE AI AGE

DesignIntelligence®
MEDIA
May 2024



COMMUNICATION IN THE AI AGE

Angela Watson

President and CEO of Shepley Bulfinch

Angela Watson examines artificial intelligence in the context of communication — and shares an experiment.

AI's Content and Communication Value

Looking at news feeds today,¹ it is almost impossible to escape yet another article, press release or announcement about artificial intelligence (AI). There are myriad opinions about what AI can and can't do, if it will destroy or empower humanity and how it may change our future – for better or worse. Meanwhile, many of us are experimenting with AI, curious about how it may change our work, our roles and responsibilities, and how we connect with the world and each other.

When discussing the impact AI may have on the design professions, particularly architecture, I often hear people compare AI to other technological advances, such as the internet or building information modeling (BIM), describing AI as a tool that will overcome and replace rote tasks we don't want to take on. But is that all? Is there something more fundamental at work? How does it compare to past tools?

One Firm's Communication History

I have been thinking about AI and related issues for some time. In 2022, I was asked to give a presentation at AIA Arizona and decided to explore the history of our 150-year-old firm. I described our transformation from our founding by Henry Hobson Richardson to a women-led, hybrid workplace that embraces diversity. I spent time in our archives

looking at linen drawings and 100-year-old models and walked past H.H. Richardson’s oversized chair and library collection countless times but decided to focus on the evolution of tools, communication and the workplace. While crafting this story I was struck by two things.

First, it became clear from our archival photos that the “typical” architect’s office had not changed much as of 2020. Open workstations, with spaces to pin up drawings were ubiquitous, with T-squares giving way to Mayline parallel bars and desktop computers, followed by laptops. But the open studio setting remained. All that changed in 2020, when a global pandemic forced us to leave the studio and rely on a new set of communication and collaboration tools. Since then, the definition of the workplace has evolved, including remote and in-person work scenarios that remain hotly debated.

Second, OpenAI released ChatGPT and DALL-E, drastically changing the dialog and awareness of AI and suggesting fundamental questions about the future of design. Charting these findings, the increasing



Image courtesy Shepley Bulfinch archives

rate of change in tools, the change in workplaces and the addition of AI reveals a steeply rising line. It suggests a radical shift in our work process and environment after the relative stability of the last 150 years.

Curious to look to the future and understand the implications, I tried to compare tools and processes with my experiences experimenting with AI. In particular, I was interested in understanding how using these tools would be different in the future, to understand how we might communicate differently with these new tools, machines and intelligences.

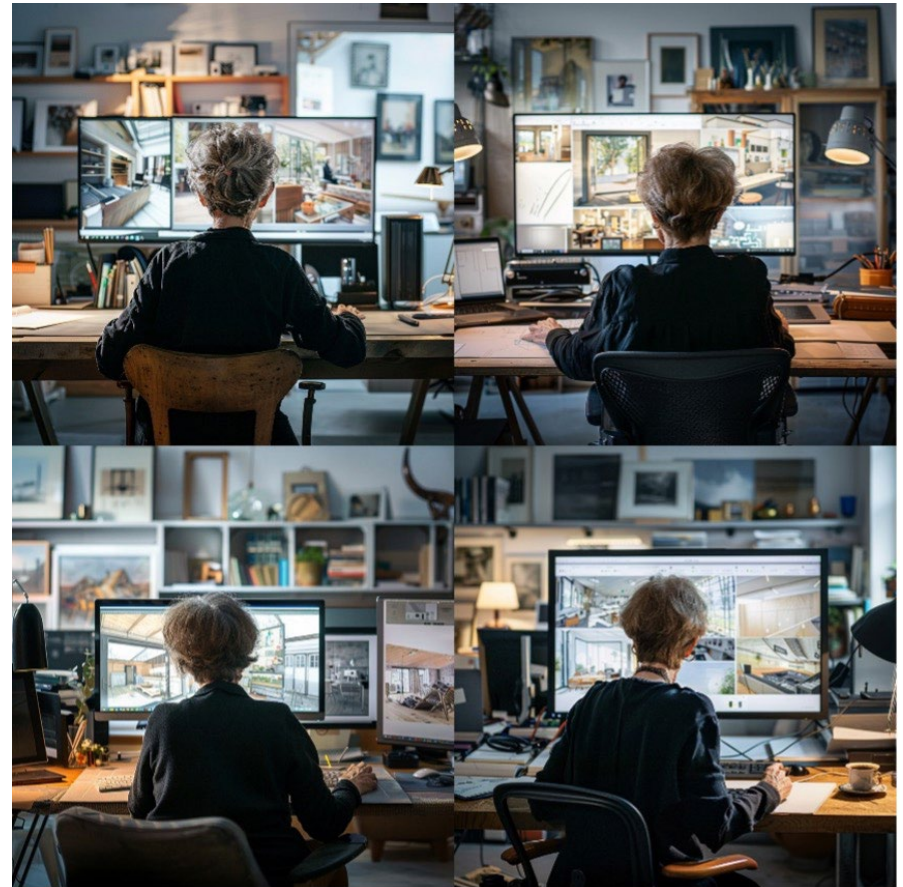


Image courtesy Pablo Herraiz Garcia de Guadiana

How Is AI Different?

To investigate further, I went back to the Shepley Bulfinch case study. Over the 150-year firm arc, communication began with handwritten notes, letters and memos, hand-lettered drawings and in-person communication. Over the years this changed to include the telephone, typewriters and carbon copies, mimeographs, faxes and copy machines. In 1980, four desks shared one telephone. Since then, new technologies have accelerated information flow, with email making the fax machine obsolete. Even before the pandemic, we added social media and collaboration platforms such as Slack and Teams to our tool set. It's notable that the speed and quantity of information flow has accelerated dramatically, making it difficult, if not impossible, to keep up, especially if one considers our input method of typing individual letters and numbers, punctuation one at a time (as I am doing now). The act of writing this makes me realize exactly how arcane the process is. Other tools we continue to use for presentation and computation are similar in structure to their predecessors and equally arcane.

Similarly, the tools we used in design and architecture began with T-squares, pencils, paper, ink on linen and models. Efficiency increased through blueprints and calculators, and as we entered the digital age, tools became more advanced and efficient. We added computer-aided design (CAD), which was just drawing lines electronically as vectors, meaning two points and a line between them. But those lines were still exactly, and only, what we told them to be. They were like digital pencils with the added advantage of being able to be duplicated without being erased and redrawn by hand. We have now expanded to even more complex tools like BIM, virtual-reality design tools, parametric models and energy modeling tools. While we can process and convey more information on shared digital platforms, we are still controlling every aspect of input and output. More importantly, the output is predictable and repeatable. We input data and receive a certain output. And if we input the same data again, we get the same output as before.

The same approach is true for most other tools we use, including Excel, PowerPoint and data visualization. We control every aspect of the process.

Embracing AI, Virtual Work and Communication Today – An Experiment

So how is AI different? Is it? The first time I experienced ChatGPT, I was about to start working on a report and decided to try an experiment. I quickly typed five brief bullets and asked ChatGPT to write a seven-to-eight-paragraph president's report on my phone. I was stunned to find it generated a fairly comprehensive narrative of what I had wanted to say. The core statements were there with a nice amount of context. I now realize that this is probably because most board reports sound predictably similar. Based on those available on the internet, ChatGPT was able to generate something that sounded very plausible. My questions now are: Do we all sound the same, and is that necessarily a bad thing? Are we creating our own echo chamber, or are we already in it? Are there ways to be more targeted and creative about what we want to convey?



Image courtesy Shepley Bulfinch archives

“

My questions now are:

- Do we all sound the same, and is that necessarily a bad thing?
- Are we creating our own echo chamber, or are we already in it?
- Are there ways to be more targeted and creative about what we want to convey?

”

Now, AI-enabled tools are everywhere. ChatGPT has evolved, allowing us to save communication and writing styles in our settings and to access more recent data. In the Microsoft Office suite, Copilot has entered the scene, giving us access to our own data and files. It works directly inside Microsoft Office applications, promising to help us write reports, summarize emails, compose messages and interrogate data.

One recent experiment proved quite successful. I was curious how well Copilot would fare in creating a vision statement. I pointed to three internal documents by starting to type file names and waiting for Copilot to find these files on the server. Based on these three – our shared purpose statement, our strategic plan and a stakeholder analysis – I asked Copilot to generate a short vision statement. The result was a very nice document with two paragraphs and a few bullets that nicely summarized all we had said in those documents. The good news: It sounded good and validated our thinking. The bad news: It didn't stand out. It was easy to read and said all the right things but didn't provoke thinking or emotional reaction.

I decided to take a different approach. This time I included the same documents but asked Copilot to use a specific, one-sentence statement and work the information in the other documents around it. This yielded much better results with two distinct paragraphs. The first outlined the memorable statement, the second added more detail. I chose only the first paragraph, which also resonated with some of our stakeholders.

By now you may be wondering if I wrote this article with Copilot. Not quite. I did, however, use this opportunity as an experiment. Testing Copilot's limits, I started by asking for an 1,800-word article based on a series of bullets that were more stream-of-consciousness than an actual outline. Unfortunately, the resulting text turned out to be a somewhat self-promoting self-description of AI.

Working from a different angle I tried another approach. I am a slow typist, having never learned to type without closely observing my hands on the keyboard. I had tried dictation and found it incredibly frustrating, similar to typing. While faster, in using speech-to-text dictation, one still has to articulate commas, periods and carriage returns – more holdovers from a bygone era. I thought this might be a good challenge for Copilot. Via the dictation tool, I narrated content for a few paragraphs, but did not add punctuation. This resulted in raw data and semi-intelligible writing with occasional half sentences,

misinterpreted and misspelled words, and no punctuation to speak of. I was hopeful Copilot would be able to turn my direct verbal transcript into something sensible and maybe even compelling. I was right, at least about the sensible part. Parts and pieces of this experiment are incorporated here.

ANALYSIS

So how did my experiment go? What did it tell me? AI “behaves” differently from tools that are digital extensions of our pencils, slide rules or paint brushes. Results vary depending on how the prompts are written and are often different even if the prompts are the same. AI makes up things when it does not have clear answers. AI is not predictable. I might go as far as saying AI “behaves” more like a human colleague than a machine. Its response to our request or prompt depends on many factors including context and training. Working with AI is surprisingly similar to communicating with humans. We need to understand their motivation, background, beliefs – maybe the equivalent to AI training. We may actually have to develop something like AI empathy to work well with it. AI has the potential to help us do better work, achieve better outcomes, do both faster and process much more information than before, but all of it depends on our ability to ask the right questions.

Working with AI-enabled tools effectively requires better communication skills. Instead of directing AI to complete very specific tasks with predictable outcomes as we are used to doing with other tools, like typing individual letters on a keyboard, creating Excel formulas or modeling building components, we have to describe an outcome. This includes describing the intended audience, outlining a goal, detailing intent, providing relevant information and defining quantity and scope for the desired product or outcome.

This should not be surprising. Effective communicators already do this. It is considered good management that empowers people to work at their highest level with the most agency. As we learn to work with AI and it requires us to be better at articulating intent, will it train us to be better communicators, or will we be delegating this to prompt engineers? My hope is that we will discover the answers to this and other questions by experimenting and learning. There is no time to waste. While we humans are catching up, AI is evolving, offering opportunities to tackle bigger problems faster and more effectively.

“ I might go as far as saying AI “behaves” more like a human colleague than a machine. Its response to our request or prompt depends on many factors including context and training ... all of it depends on our ability to ask the right questions.

”

Impacts and Actions, Individually and on the Larger Scale

How will AI’s emergence impact us and our businesses in the future? One thing seems certain: the speed at which these tools are evolving and being adopted. Since the first time I tried ChatGPT, countless AI tools have emerged. They are now appearing in image software and generating video footage that looks realistic. Smartphones integrate AI in their operating systems, and software that we used to call word processing now has Copilot as a virtual helper and partner (or a Copilot that significantly changes the way we create).

What can we do to prepare ourselves for a future that includes AI, when new apps appear daily and evolve at breathtaking speeds? We don't know what these tools will look like, but we do know they will demand that we adapt, communicate more effectively and embrace change. We will need to be more agile, question our assumptions and become lifelong learners.

My current reading list includes *Sapiens*, a book about the evolution of humans by Yuval Noah Harari. In it, the author describes a key milestone in human development as the ability to manage, share and convey larger and larger quantities of information. He points out that this is how writing likely evolved and allowed humans to scale their influence by extending their reach of collaboration and motivation.

Is this a similar inflection point, where we, with AI's help, will be able to increase our abilities to process and manage information, motivate and empower larger groups of humans?

And when we do, what will we do with this power?

Angela Watson, FAIA, is the president and CEO of Shepley Bulfinch, a 150-year-old national architecture and design firm with studios across the United States. She is the chair of the board and a design leader at the firm. She leads with a vision of collaboration, creativity and design excellence and values communication as the key to understanding the needs of clients, communities and stakeholders. Angela's post-occupancy research demonstrates her dedication to creating spaces that positively impact people and their communities. She connects teaching and practice to develop innovative solutions that are adaptable to a changing world.

Born in Germany, she studied at Universität Karlsruhe and earned an MArch from MIT, where she taught design in subsequent years. She is a senior fellow of the Design Futures Council.

¹ Editor's note: We used to do this by reading hard-copy printed documents called newspapers. They were delivered to our front doors, driveways and steps via bicycle or automobile, or acquired at newsstands in cities. Before that, we got our news about the world by viewing weekly newsreels at Saturday matinee movies in theaters.



EMBRACING RESPONSIBILITY

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EMBRACING RESPONSIBILITY

Esperanza Harper

Health Care Planner and Innovation
Leader, LS3P

Esperanza Harper challenges us to enable justice, equity, diversity and inclusion by design.

Catalyst

Throughout our lives, significant events can have tremendous impacts on our values and purposes in life. For me, and perhaps for many of you, that significant event was the murder of George Floyd on May 20, 2020. Identifying a single reason why this familiar story of a Black man murdered by a police officer was a tipping point is challenging. Whatever the reasons, I am encouraged to see myself, individuals and corporations across the nation taking on greater responsibility for addressing injustice. We are in the age of activism, or at least it seems to be rekindled in those of us who refuse to fall over the precipice to our societal demise.

Questions

In an August 16, 2020 ArchDaily article, “The Political Dimension of Architecture: Activism Through Design,”¹ author Andreea Cutieru asks the very questions that the events of May 20, the outbreak of a global pandemic and the storming of the US Capitol were leading me to ask myself:

- In light of so many examples of social activism, do architects have the tools to make their stand?
- Does architecture have the power to disrupt the status quo?
- Will the profession embrace these responsibilities?

Answers and Framework

I believe the answer to the first two is yes, we do have the tools and the power. One of the tools with great transformational potential is the AIA's Framework for Design Excellence, which "represents the defining principles of design excellence in the 21st century. Comprised of 10 principles and accompanied by searching questions, the framework informs progress toward a zero-carbon, healthy, just, resilient, and equitable built environment."² The framework offers a way for designers to bring clients along on a journey that solves the immediate need for a structure and simultaneously builds upon human aspirations. Since its inception in 2003, the framework has served as an excellent point of beginning, but its answer – and eventual impact are pending.

But having begun, we must now delve deeper into our discourse, to action.

“
In these ways, and many more, we
can make a difference and embrace
our social responsibilities by — and
with — design.
”

History

To reach such depths, we must critically assess centuries of placemaking to understand how our built environment perpetuates power dynamics. In doing this, I believe we will see our roles as architect-activists as relevant to practice as building information models and the digital transformation have become.

In architecture critic Lee Bey's recent article "Southern Exposure: The Overlooked Architecture of Chicago's South Side," he states, "Architecture and design have been silent partners in oppression in the United States and around the globe." Bey's depiction of the built environment co-laboring with humans to oppress is echoed by other scholars, including Professor George Lipsitz at the University of California, Santa Barbara. In his book "How Racism Takes Place," Lipsitz reveals how seemingly race-neutral urban sites contain hidden racial assumptions and imperatives. Evidence of systematic racial typologies in architecture can be traced as far back to the writings of Eugène-Emmanuel Viollet-le-Duc. In chapters of "Histoire de l'habitation humaine" (1875), Viollet-le-Duc begins with descriptions of physical features and mental descriptions of race. These descriptions were aligned with beliefs of racial inferiority and race theories of the day, which were illegitimately supported by the pseudoscience of measuring human bodies to justify claims. Viollet-le-Duc organized the chapters of the book linking racial groups to a distinct dwelling type. He then used those descriptions to associate dwelling types, materials and construction methods with race and establish a subjective position on style and nationalism that would be echoed throughout centuries to come.

While subtler than matching physical characteristics to inanimate objects, Adolf Loos' modernist credo associated ornament with "primitive" peoples and went further to call ornament a "crime" and "only for criminals and other inhabitants of the lower rungs of the evolutionary ladder and not for modern Europeans."³

These examples should give us pause when we consider Viollet-Le-Duc's and Loos' influences on modern architecture. The long-lasting effects of racialized definitions of design excellence are still evident today. Architects and designers wield decision-making power over the physical form of spaces but often draw from a limited pool of cultural and historical influences and references.

Actions

These precedents and many more recent, well-known examples illustrate how the built environment silently reinforces oppressive sentiments. For instance, the exclusionary redlining policies of the 1930s; the disproportionate number of toxic industrial sites in communities of color; and inequitable urban economic development policies are manifestations of a history fraught with injustice. How can we effectively initiate today's pursuit of justice, equity, diversity, and inclusion in our built environment, given much of it was intentionally *designed* to uphold supremacy, separatism and injustice?

The answer is: We can't. Not until we intentionally criticize the thinking that led us here, uncover the current ways the built environment is still in *silent* partnership with marginalization and oppression and redefine the fundamentals of the built environment to break down power dynamics, eliminate injustice and equitably serve communities. Here are just a few ways we can take action to turn this tide. We must embrace the responsibility to:

1. **Break down power dynamics in the built environment.**

Look for segregation within spatial layouts and deploy tools that quantitatively measure spatial constructs to increase integration. Segregated space is more identifiable at the urban scale; however, at the building scale there are settings in which spatial hierarchies echo society's racial, gender and socioeconomic hierarchies. Ask whether these spatial hierarchies are necessary for the building's function and aspirational goals. If not, experiment with layouts that bring more occupants in visual and physical proximity to one another to showcase diverse ways of being in space.

2. **Eliminate injustice.**

Learn about communities within a two-hour radius of your home facing unjust policies, zoning regulations and obstacles to development. If your projects are situated in these areas, commit to serving with local activist and grassroots organizations to reform policies and advocate against injustice, particularly for communities lacking representation.

3. **Address our implicit biases in design.**

Admit and reject the influence of racialized aesthetics by becoming more inclusive in our sources of inspiration, by spending time with people who are different from us and by working on consciously changing our spatial stereotypes.

4. Equitably serve communities.

Allocate time to incorporate input from those who may benefit least from our projects and are likely to be the most vulnerable stakeholders. Identify the undeserved outcomes of design projects and unapologetically decide to build the proverbial curb cut—physically, in solutions for the disabled that are ever appreciated and beneficial to people with strollers, joggers or wearing stilettos, and metaphorically, by enabling access to social systems for all.

In these ways, and many more, we can make a difference and embrace our social responsibilities by – and *with* – design.

Let's continue.

¹Andreea Cutieru, "The Political Dimension of Architecture: Activism Through Design," ArchDaily, August 16, 2020, <https://www.archdaily.com/945659/the-political-dimension-of-architecture-activism-through-design>.

²"AIA Framework for Design Excellence," American Institute of Architects, accessed February 9, 2024, <https://www.aia.org/design-excellence/aia-framework-design-excellence>.

³Irene Cheng, Charles L. Davis II, and Mabel O. Wilson, *Race and Modern Architecture: A Critical History from the Enlightenment to the Present* (Pittsburgh: The University of Pittsburgh Press, 2020), 150.

Esperanza (Espy) Harper is an experienced health care planner and innovation leader at LS3P who is passionate about the intersections of innovation, health care and health equity. Her project work has stretched across the continuum of care, with a portfolio that includes everything from strategic facility master planning to replacement hospitals to pharmacy planning to mobile employee health clinic prototyping. She has had the privilege of working with such organizations as Cleveland Clinic, University of Pittsburgh Medical Center, Essentia Health, UNC Health, Novant Health, WakeMed, Aurora Health and the University of Michigan.

Espy's passion was ignited in her early years developing workshops for the Annual Planetree Conferences. Since then, she has developed her superpower: the ability to push boundaries of design and programming with client users (and peer designers) by co-engaging the technical, clinical and social aspects of the work. Espy is adept in her ability to translate relevant research findings into design concepts and discover ways to seamlessly integrate design research into project delivery. She has co-authored and presented on health care design research in prestigious venues, including the Planetree Annual Conference, Healthcare Design (HCD), the Healthcare Systems Process Improvement Conference and the Health Environments Research & Design Journal (HERD).

Recently, she has teamed with Taft Cleveland of SmithGroup and Tammy Thompson of ECU Health (formerly Vidant Health) to form the Health Equity Design Collaborative with the goal of dismantling health inequity through meaningful design impact. Espy, Taft and Tammy were named "Industry MVPs" in Healthcare Design magazine's annual HCD 10, 2022 awards program, which honors industry standouts across 10 professional categories and recognizes outstanding achievements in the past year.



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THE PROMISE: A HOLISTIC, VALUES-BASED ARCHITECTURAL EDUCATION

Michael J. Monti, PhD, Hon. AIA, NOMA
Executive Director of the Association of
Collegiate Schools of Architecture
(ACSA)

ACSA head Michael Monti lays the foundation for multidimensional architectural education — and accountability.

Abstract: Monti argues the architecture profession stands to benefit from an educational model that emphasizes the foundational values and ethics of the profession, rather than simply technical expertise. With sweeping change enabled by technology and with growing imperatives for the AEC industry to be more accountable, professional education in architecture needs to prepare four-dimensional graduates: technically sound, capable communicators, systems thinkers and ethical, accountable professionals.

Leadership and relevance are at stake for the architecture profession now more than ever. From sustainably designed, sourced and operated buildings to healthy and equitable cities, the profession's firms have the opportunity, if not the obligation, to be more than service providers for clients. To assert ourselves, however, I see the need for a consistent thread to be pulled through from education into the profession's firms. This thread foregrounds the ethical foundations of the profession as opposed to the technical aptitudes of building design. These foundations should be considered core to what sustains architecture as a licensed profession and as a basis for growing architecture's value. At the conclusion of this essay, I stake the claim that although technical expertise remains a requirement, it is but one of four dimensions of architecture graduates that will best serve the profession's demand for future leadership and relevance.

What qualifies architecture as a licensed profession is more than the conventional definition, one grounded in protecting the public from fraudulent practice and dangerous buildings. What creates value for architecture as a profession is more than the technical outcomes of building design. Michael Bayles in his book “Professional Ethics”¹ offers some general characteristics of professions:

- Professionals provide services that are well defined and differentiated.
- The profession requires a level of expertise that others cannot easily acquire.
- People need these professional services for a civilized life.
- Clients who access these services are vulnerable to mistreatment due to fraud, negligence or other malfeasance.

Professions are accorded various levels of respect and prestige and, importantly, are given autonomy in how they organize and regulate themselves through education and licensure. Protecting the health, safety and welfare of the public is typically the first reason given for why architects are licensed. Licensing also serves other purposes beyond protecting the public. Licensing appropriates a legally defined realm of work to a group of people and excludes other nonprofessionals or paraprofessionals from access to that domain of work.

In recent years we have seen movements in various states to deregulate certain fields on the grounds that such regulation unnecessarily hinders commerce or access to a market for services. If architecture is defined in terms of the technical services needed to deliver buildings, then we might fall prey to the argument that architectural services are not sufficiently differentiated to justify licensure. As technology has rapidly developed in architectural design, the knowledge and skills that previously belonged to architects – largely in an analog world – are no longer our differentiators. From CAD to BIM to many other digital tools that turbocharge the design process, software has helped broaden the kinds of knowledge and expertise that a host of disciplines and professions can bring to support a building project.² Not to mention the advent of AI in the profession.

“ Although technical expertise remains a requirement, it is but one of four dimensions of architecture graduates that will best serve the profession’s demand for future leadership and relevance. ”

In current practice, shared or complementary skills are valuable for clients and firms who bring people from different disciplines together to complete projects. But the question remains: In today's practice environment, what kinds of knowledge and expertise differentiate architects from other licensed or otherwise regulated professions in the built environment? The answers are essential to expanding the relevance and leadership position of the architecture profession.

The third of Bayles' four points suggests that we think broadly about what might be entailed in the concept of a civilized life. This is essential to what architects strive to bring into being. It is also what differentiates architecture from mere buildings.

Inherent in a civilized life are shared concepts such as dignity, freedom, health and well-being, beauty and equity, among others. These concepts reflect the nature of social relationships made possible by the ability of individuals to think of themselves in these terms – i.e., as healthy, free, valued by society, etc. – or by the ability of individuals to strive for these kinds of situations in their own lives and in the lives of the people they consider family, friends and fellow community members. Architects have roles in making these values possible, and this is precisely what the broader public needs to understand.

“

In today's practice environment,
what kinds of knowledge and
expertise differentiate architects
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environment?

”

Architecture is far from being a mercenary field whose practitioners see their roles simply as carrying out the contractual demands of a client and only those demands. Rather, architects have long seen and still should see themselves as having an obligation to bring forth these kinds of shared values into civic life as a result of what they know and do – a form of exchange for the status and autonomy associated with being recognized as a licensed professional.

I am not implying that most in the architecture field do not aspire to these higher outcomes. I believe they do. I am instead arguing that these outcomes and the obligations that generate them should be front and center in how anyone who considers themselves part of the profession views our field and its possibilities. The key word in this assessment is accountability. If architects are not merely service providers doing the bidding of their paying clients, then it is because architects answer to higher obligations and are willing to be accountable for them by understanding their past, their present and what the possibilities can be for the future.

I underscore that these obligations exist in our present, in our future and in our past. Understanding the profession's history is also essential to understanding its present. What role, direct or indirect, does the architecture profession have in our society's greatest policy and practice failures, from unjust gentrification to disparities in access to health care, education, housing and other public goods that are affected by the design of built environments? Architecture as a profession must be accountable to its past so it can critically assess its future.

In essence, I am arguing that a renewed understanding of the value of the profession and the obligations that come with this expanded value is premised on a reevaluation of architectural education. This begins to expand a sense of what architectural education could be in an age when software has enabled so many more fields to contribute to building design and construction. To offer one such approach, I suggest an expanded, four-dimensional model for architecture graduates.

Professional education in architecture demands and must serve students who are:

- a. Technically sound.
- b. Capable communicators.
- c. Systems thinkers.
- d. Ethical and accountable.

Expanding on each of these attributes is beyond the scope of this discussion. Nonetheless, I still believe graduates must understand how a building goes together. They also need to understand the processes and standards by which buildings are designed, through all phases of the design process.

But architects are not the only ones responsible for how buildings and their systems are synthesized, yet they are one of the few contributors also responsible for understanding and being accountable for the building or project's big picture. This resides in the client's building program and aspirations, as well as in the impact of the project on a variety of stakeholders, from the building's immediate neighbors to its relationship to the city, to its relationship to the natural and man-made systems that will supply its water or produce its timber, steel or concrete.

To uphold this responsibility, architecture graduates must be multiskilled communicators, capable of demonstrating these aspects through drawing, writing and speaking. They must be able to understand how social, economic, environmental and other systems come together in an architectural project.

And finally, they must have the knowledge and the grounding to be accountable for these implications.

¹ Michael D. Bayles, *Professional Ethics* (Belmont, CA: Wadsworth, 1989), 8–14.

² A similar point about the potential for architects work to be usurped by other fields is made by Anastasia Cortes, "On the Value(s) of an Architect," in *Proceedings of the 106th ACSA Annual Meeting* (2018), available at <https://www.acsa-arch.org/proceedings-index/>.

Michael Monti is executive director of the Association of Collegiate Schools of Architecture, the membership organization for architecture schools in the United States and Canada.



NEUROARCHITECTURE AS HEALING DESIGN IN A CHANGING CLIMATE

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NEUROARCHITECTURE AS HEALING DESIGN IN A CHANGING CLIMATE

DeeDee Birch

Sustainable Design Consultant
and Writer

Brains, bodies and the built environment

No two human brains are exactly alike. There are over eight billion people on the planet and every single one of them has a brain uniquely theirs, much like a fingerprint. We know this because of the radical advances in neuroscience that have marked the last few decades. These individualized “brainprints” serve as evidence of the vital, inescapable link between brains and the built environment.

Neuroarchitecture

The term neuroarchitecture encompasses the research and emerging design practices that explore this link. In other words, neuroarchitecture is an “emerging field that combines neuroscience, environmental psychology, and architecture to focus on human brain dynamics resulting from action in and interaction with the built environment.”¹ Increasingly advanced technologies ranging from functional magnetic resonance imaging (fMRIs) and mobile brain/body imaging to virtual reality technologies have allowed scientists to study people’s neural responses to all our environments, designed and natural. The language and boundaries around this research, however, remain nebulous – a permeable space that encapsulates many words and ideas evolving in real time. A close, relevant relative of neuroarchitecture is neuroaesthetics, an area of research popularized by scientist Anjan Chatterjee that examines the neural mechanisms

underlying our responses to the arts. He is one of many scholars now trying to understand how and why we find creative pursuits – visual arts, music and dance, theater performances – meaningful, beautiful and, at times, deeply cathartic to consume and create.

Neuroplasticity

Fundamental to our current understanding of the relationship between environments and brains is scientist Marian Diamond's work on neuroplasticity. She studied the brains of rats after placing some in "impoverished environments" devoid of anything but essential food, water and daylight and others in "enriched environments" that contained toys, textures and opportunities for play and exploration.² Diamond found that the rats in the enriched environments had larger cerebral cortexes than their counterparts in impoverished environments, whose brains had shrunk. Not only did Diamond illustrate that "impoverished spaces have a slow, corrosive effect on health and well-being,"³ but she also proved that our physical environments have the capacity to reshape our brains. Many factors rewire and change the structure of our brains. Stress, trauma, sleep, meditation, food, language, substances – all can alter your brain. The phenomenon of synapses firing and wiring in endless changing patterns across billions of neurons is called neuroplasticity, and it plays an important role in neuroarchitecture.⁴

Neuroscience

Neuroscience in the context of the built environment can be broadly characterized by a few key themes:

- A rejection of dichotomies and binaries in favor of relational ecosystems.
- Architecture as foundational in memory and identity.
- The value of empirical evidence combined with collective embodied knowledge and awareness.

Because of these defining features, neuroarchitecture holds the potential to radically improve human health and drive equity-focused solutions throughout the built environment in the face of a rapidly changing climate.

First, the notion of dichotomies. Neuroscience and psychology are disciplines that have historically been defined by binaries. These include perception versus action, organism versus environment, mind versus body and subject versus object.⁵ Descartes' notion of dualism, in which the body and mind are separate entities and the body is merely a passive object feeding information to the brain, dominated neuroscientific thinking until very recently. Then, we started to understand embodied cognition, which refers to the idea that the body each of us inhabits shapes our thoughts and experiences in the world.

Cognition

Design scholar and architecture critic Sarah Williams Goldhagen explores cognition as the product of a deeply collaborative, continuous exchange between the body, mind and whatever environment one occupies. In Goldhagen's view, science has greatly underestimated the role of the body in human cognition:

The body is not merely some passive receptacle for sensations from the environment, which the mind then interprets in a somewhat orderly fashion. Instead, our minds and bodies – actively, constantly, and at many levels – engage in active and interactive, conscious and non-conscious processing of our internal and external environments.⁶

As much as 90% of human cognitions are subconscious, meaning they happen without us realizing it or applying language to them. These cognitions include sensory impressions, of which we have countless throughout a single day. They include traditional sensory information like touch, taste, sight, sound and smell, but also other senses we are just beginning to understand, like proprioception and interoception.

Cross-Modality

In Goldhagen's mind-body-environment paradigm, these sensory impressions and subconscious cognitions shape each other as well as our actions and conscious cognitions. Their cross-modality serves as the foundation of human experience. Walking in the rain, for example, may change your perception of temperature or wind, making you feel colder. It also might color your mood, making you more short-tempered or shaping an interaction you have with someone you pass by. And

vice versa: If you're walking in the rain and have a negative interaction with someone, it may impact your perception of the rain, wind or temperature. Different sensory information would create an entirely different experience. Even these same sensory factors for one person might produce an entirely different experience for another depending on previous personal experiences, identity and context. This is the complexity and nuance of the human condition.

Ecological Psychology

In another radical rejection of binaries, psychologist J.J. Gibson pioneered an area of study called "ecological psychology," which reimagined the organism versus object dichotomy as a relational system.⁷ In his view, every built environment was full of affordances, or opportunities for action. As people move through the world, they scan for affordances in a constant perception-action loop that shapes their cognitions. Our perceptions of affordances matter as much as the actions we choose to take, and our ability to perceive affordances depends on active exploration of our environment. In this conception, affordances depend equally on the organism and the environment, and they exist as two codependent facets of a singular system.⁸

If we understand the connections between brains, bodies and buildings through the lens of relational systems, embodied cognition and neuroplasticity, the role architecture holds in memory and identity begins to materialize. It comes down to something quite simple: Because we are embodied beings moving through time and space, all our memories have spatial and temporal contexts, and these memories accumulate to form our identities.

Making Meaning

Through his extensive work and scholarship, Finnish architect Juhani Pallasmaa has solidified himself as a formative voice in neuro-informed architecture. Pallasmaa underscores architecture as a central, collective method of meaning-making:

Buildings mediate the world and our consciousness through internalizing the world and externalizing the mind. Structuring and articulating lived existential space and situations of life, architecture constitutes our most important system of externalized order, hierarchy, and memory.⁹

“ It comes down to something quite simple: Because we are embodied beings moving through time and space, all our memories have spatial and temporal contexts, and these memories accumulate to form our identities. ”

In the most palpable sense, our identities and self-narratives become embedded in the places we inhabit, just as those places become formative parts of our biology. Brains and buildings transform one another.

Brain Functions

All this neuroarchitectural research originates in the uncovering of highly specific functions of the brain's anatomy that fuel better design. For example, the olfactory bulb feeds directly into the limbic system, where long-term memories and emotions are stored in the brain; this is why smell can trigger memories and emotions so instantaneously, bringing someone back to a place and a moment from decades ago. This makes olfactory cues in the built environment incredibly powerful. Human spatial mapping abilities are located in the hippocampus, where new memories are formed, intertwining wayfinding abilities with memory and identity, which yields fruitful solutions in the realm of user-specific design approaches like aging in place.

In his essay “Losing Myself: Designing for People with Dementia,” architect and professor at the Barlett School of Architecture, University College London, Níall McLaughlin reflects on his neuroscientific research throughout the process of designing a respite center for those with Alzheimer's disease. He writes about how his team “thought about the experience of dementia as a continuous present tense. You are unable to remember where you have been and therefore cannot project where you might go. We wondered what it might be like to experience the world as an ongoing unfolding, held between empty expanses on each side. The sense of the past moving into the future must dissolve. The intuition of sequence, of one event or place following another, would collapse.”¹⁰ Only through advances in neuroscientific inquiry can practitioners engage in a more empathetic design process that accounts for a loss of identity and sense of self as much as it solves for physical needs like navigation and wayfinding.

If we place this case study into Gibson's affordance framework, relational systems are also made abundantly clear. Stairs, for example, only function as transportation when the being in the building has both the physical capacity to climb them and the mental ability to orient themselves in time and space. McLaughlin's project had no stairs because his building occupants were universally living in various states of cognitive and physical decline. Stairs would offer no viable opportunities for action in this occupant-building ecosystem.

Climate Change & Neuroarchitecture Interplay

Neuroarchitectural research stresses the relationship of reciprocity between our brains and the environment. And our environments – designed or not – are changing rapidly in the face of the climate crisis. Our brains are already undergoing massive transformations as a result.

A recent article in *Natural Climate Change* by Kimberly Doell et al. stresses that higher temperatures “increase human and non-human mortality, decrease cognitive performance and ability to learn, decrease self-control, and have been associated with increases in crime rate and civil conflict.”¹¹ Furthermore, research has shown that heat makes the blood-brain barrier more permeable, allowing dangerous toxins to leach into the brain.¹² While poor air quality has long been associated with respiratory concerns, it also correlates with negative impacts on the brain. As is most often the case, those living in poverty are more severely impacted by the consequences of climate change. In the realm of brain health, significant structural and functional neural changes are a result of a lack of cognitive stimulation, exposure to toxins, poor nutrition and heightened childhood stress among lower socioeconomic demographics.¹³

Environmental Justice

As climate change renders some climates uninhabitable and natural disasters like forest fires become frequent, people are forced inside, increasing the burden of well-being on the buildings to which they have access. For these reasons, environmental justice sits squarely in the center of the dialogue about brains and the built environment. As we suffocate and overheat the planet, natural resources like clean air, clean water and safe, enriching environments become increasingly commodified and harder to access. Only those who can afford thoughtfully designed places in areas with robust public infrastructures reap the benefits of breathable air, drinkable water and nourishing places to live and work. This echoes poverty expert and scholar Matthew Desmond's exploration of the vicious cycle of private opulence and public squalor in his book “Poverty, by America.” He illustrates a self-reinforcing cycle of disinvestment in public infrastructure in which those with private wealth become less dependent on public infrastructure and services, and therefore less interested in supporting them. The more vast the privatized resources become, the greater the disinvestment in public spaces and services.

When we look at the relationships between brains, bodies and our environments, the research once again points us back to nature. Susan Magsamen, the founder and director of the International Arts + Mind Lab, Center for Applied Neuroaesthetics at Johns Hopkins University, and Ivy Ross, the vice president of design for hardware products at Google, in “Your Brain on Art: How the Arts Transform Us” call nature “the ultimate enriched environment.”¹⁴ According to them – and the many researchers working in biophilic design, evolutionary biology and psychology – “nature is the most aesthetic of places, because it is our original home.”¹⁵ As much as neuroarchitecture sparks debates about neuroanatomy and better building design, it also begs the question: How might buildings once again democratize our original home, regenerate her natural resources and ensure equal distribution for all? Architects and designers undoubtedly have a role in developing answers.

For Practitioners

As our neuroscientific understanding of the human brain becomes more sophisticated, so too can neuroscientifically informed design strategies. The coming decades will see a rise of concrete and unified design frameworks to be applied to the design of the built environment. In the meantime, neuroarchitecture calls for an evidence-based approach to designing buildings, which has been made most accessible by the Center for Health Design.

Neuroarchitecture also invites closer, more meaningful collaborations between architects and neuroscientists. It asks architects to peel away, even if for a brief time, the pressures of performance, bottom lines and stakeholders so that they can consider how a building will interact with its occupants and how it will set the stage for their lives. What might it mean to approach a building as a “living ecology of affordances”¹⁶ that will invariably become a critical part of a life-affirming and identity-affirming feedback loop for every occupant in a unique way?

Neuroarchitecture ultimately helps people live in bodies, minds and places that feel fundamentally safe; it helps people make sense of their inner and outer worlds. Perhaps most importantly, neuroarchitecture illuminates where the significant inequities of the built environment hide as our planet rapidly warms. Innovative solutions emerge at the place where empirical evidence meets imagination and embodied awareness.

- ¹ Tulay Karakas and Dilek Yildiz, "Exploring the influence of the built environment on human experience through a neuroscience approach: A systematic review," *Frontiers of Architectural Research* (October 2019), <https://doi.org/10.1016/j.foar.2019.10.005>.
- ² Susan Magsamen and Ivy Ross, *Your Brain on Art: How the Arts Transform Us* (New York: Penguin Random House, 2023), 14.
- ³ Magsamen and Ross, *Your Brain on Art*, 14.
- ⁴ Magsamen and Ross, *Your Brain on Art*, 14.
- ⁵ S. Wang et al., "The Embodiment of Architectural Experience: A Methodological Perspective on Neuro-Architecture," *Frontiers in Human Neuroscience* 16 (May 2022), doi:10.3389/fnhum.2022.833528.
- ⁶ Sarah Williams Goldhagen, *Welcome to Your World: How the Built Environment Shapes Our Lives* (New York: HarperCollins Publishers, 2017), 47.
- ⁷ Wang et al., "The Embodiment of Architectural Experience."
- ⁸ Wang et al., "The Embodiment of Architectural Experience."
- ⁹ Juhani Pallasmaa, "Body, Mind, and Imagination: The Mental Essence of Architecture," in *Mind in Architecture: Neuroscience, Embodiment, and the Future of Design*, ed. Sarah Robinson and Juhani Pallasmaa (London: MIT Press, 2017), 53.
- ¹⁰ Niall McLaughlin, "Losing Myself: Designing for People With Dementia," in *Neuroarchitecture: Designing with the Mind in Mind*, ed. Ian Ritchie (Oxford: Wiley, 2020), 53.
- ¹¹ Kimberly C. Doell et al., "Leveraging Neuroscience For Climate Change Research," *Nature Climate Change* 13 (2023): 1288–1297.
- ¹² Doell et al., "Leveraging Neuroscience For Climate Change Research."
- ¹³ Doell et al., "Leveraging Neuroscience For Climate Change Research."
- ¹⁴ Magsamen and Ross, *Your Brain on Art*, 15.
- ¹⁵ Magsamen and Ross, *Your Brain on Art*.
- ¹⁶ Sarah Williams Goldhagen, *Welcome To Your World: How the Built Environment Shapes Our Lives* (New York: HarperCollins Publishers, 2017), 208.

DeeDee Birch is a regular contributor to DesignIntelligence on science-based topics.

The background of the entire page is a golden-yellow color with a pattern of concentric, overlapping ripples, resembling water droplets hitting a surface. The ripples are more pronounced in the upper half and fade slightly towards the bottom.

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Bob Fisher

Principal with
DesignIntelligence Advisory

&

Rico Quirindongo

Seattle's director of the office of
planning and community development

DI's Bob Fisher examines his interview with Rico Quirindongo in search of the architect's motivations to fulfill a higher calling.

Finding a list of architects who've held public office in the United States can be tricky. Despite laudable efforts by groups like the AIA's Center for Civic Leadership, there's little recognition or documentation of architects – whether elected or appointed – in public service roles.

After an afternoon of searching, I found only two lists showing architects in local, state or federal positions. Each totaled between 700 and 800 individuals. This is a small fraction of the 100,000+ people who work in the profession according to the Bureau of Labor Statistics.

I believe only one architect in the 20th century has ever served in the U.S. Congress – Richard Swett.

However, I don't believe for a moment that these numbers reflect the industry's commitment to creating fairer built environments. In the last 11 years with DesignIntelligence, I've interacted with thousands of practitioners in hundreds of firms. I've spoken with countless architects driven by a desire to make the world better through their work. This drive is often what led them to pursue architecture in the first place. Many have shared their challenges in reconciling their passion with the divergent interests of clients and other constraints, such as financial considerations.

That's why it's important to spotlight architects who've successfully blended their architectural work with efforts to promote a more just built environment – and those who've used their architectural backgrounds to transition into roles with even greater influence.

Recently, I had the privilege of interviewing Rico Quirindongo, Seattle's director of the office of planning and community development. Rico spent 27 years as an architect before assuming his current role, always striving to create a more just and equitable built environment. The following quotes offer a glimpse into some of the important themes from the interview.

Finding His Passion: Architecture and Social Equity

I was very good at art, and I was good at math ... so it seemed like a logical coming together of my skill sets to pursue architecture. Also, my art at the time was very focused on African American history and the struggle that my ancestors and that we as a community have had as a burden. Going to Washington University in St. Louis for my undergraduate in architecture, I got a double major with a degree in Afro-American Studies. While doing that, I realized that where I was focusing my energy in architecture was around social equity and social justice issues and realizing that I could enter into practice and have that be my focus.

Finding New Ways to Have Positive Impact: Volunteering for Organizations like Pike Place Market PDA, Historic Seattle, AIA, NOMA-NW, Tabor 100 and the Arcade Journal Board of Trustees

You discovered that I have had a little bit of a “board addiction.” It actually started very early on. I was the chapter president for the National Honor Society when I was in high school, and I just kept doing that sort of thing after ... I've always felt like I was put on this earth for a reason and that was to help people. And so, I've always felt drawn to public service.

... The investment in the organizations I've worked with as a board member were sincere interests in the vision and mission of those organizations.

“
I've always felt like I was put on this earth for a reason and that was to help people. And so, I've always felt drawn to public service.
”

“
What opportunities can we create for others to have voice in the process or to have a seat at the table that creates a more equitable framework?
”

Those positions always represented an opportunity to build my experience and portfolio and get to know movers and shakers in the city. That would be points of connection for me even after I was no longer serving on that board or civic committee.

Making a Broader Impact: Beyond Traditional Practice

When I think about our architectural education, it is very much focused on design, design thinking, to some extent engineering and architectural practice. But I don't think architecture education is focused on alternate career paths that one can pursue beyond traditional practice where you are applying that same set of skills.

So much of what we are required to do or allowed to do as architects is determined upstream. And those upstream decisions are made in government. So, the land-use decisions like what type of uses, what building envelopes, what height of buildings, what the framework of a city growth looks like, all those are decisions made in the seats of government. And then as architects, we execute on that framework, but most often are involved in that decision-making. And so I think that as part of my volunteerism I sought to try to get closer to any opportunities there were for me as an architect to be involved in those kinds of conversations, however limited, which over time ultimately led me to consider the idea of becoming a public official, specifically community development.

Scaling Up: A New Role

I got a phone call from the mayor at the time here in Seattle, Jenny Durkan – and this was a few months after the horrible tragedy of George Floyd – asking me what it would take for me to join the mayor's cabinet. Not a question that I was prepared for, but she did not know (that) I had thought about what it would be like to join city government before. Four months later, I found myself joining the office of planning a community development as the deputy director and then literally two months later stepping into the interim director position. I've been here for two and a half years now, which was very much just scaling up. So, where I was able to achieve single-site solutions that were focused on a social framework as an architect, now I'm able to do that at the scale of a city of 800,000 people.

Mentoring: Advice for Younger Architects Considering Their Career Paths

Don't wait until later to get to the thing that you want to get to, do that thing now. Find that path as a part of your regular day-to-day. And volunteerism is an opportunity to do that. And beyond the meaning that it has for civic service, being able to find those opportunities and invest in those kinds of opportunities that allow young students or young intern architects to really broaden their view and understanding of the impact of design thinking in a multitude of different ways that you don't get sitting behind a desk.

Creating Opportunities: Architects' Responsibilities in Society

And I think that as architects, we have to think about ... what opportunities can we create for others to have voice in the process or to have a seat at the table that creates a more equitable framework for how things get built and what built environment projects look like?

Listen to the full interview with Rico Quirindongo [here](#).

For more on architects in public service, listen to the interview with architect and former ambassador to Denmark Richard Swett [here](#).

Bob Fisher is a principal with DesignIntelligence Advisory and a frequent contributor to DI Quarterly.

Rico Quirindongo, AIA, has been working for 30 years to revitalize and reimagine Seattle historic landmarks and neighborhoods. He is Director of the City of Seattle Office of Planning and Community Development.

Rico believes that through vision, authentic community engagement, and multi-agency cross collaboration, opportunities for social change can be realized through community-invested civic projects.

Rico was a mayoral appointee to the Historic Seattle Council for six years, was a founding member of the National Organization of Minority Architects Northwest Chapter and Rico sat on the AIA+2030 national steering committee, a group that has seen to it that 24 cities nationally provided curriculum to help design teams and owners meet the 2030 Challenge and create carbon neutral built environment projects.

Rico works with organizations to positively influence communities through design and is committed to the betterment of his hometown, Seattle, through public engagement, design, and civic service. Rico was chair of the Pike Place Market Preservation and Development Authority Council, was a Downtown Seattle Association board member, and was AIA Seattle President in 2012-13. In 2020, Rico completed his first [Ted talk](#) and was recognized by AIA National as a Citizen Architect. He was given a Commercial Real Estate Leadership Award as a Neighborhood Champion by the Puget Sound Business Journal in 2021.

Rico was a Northwest and Pacific Regional Representative on the AIA Strategic Council, a national think tank of the member organization. He was awarded the Jennie Sue Brown Lifetime Achievement Award by the AIA Washington Council in 2022 and the UW College of the Built Environment Architecture Distinguished Alumni Award in 2023.

BEFORE AND AFTER

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May 2024



BEFORE AND AFTER

Jim Anderson

Architect and Partner at DIALOG

In a daring thought experiment, Jim Anderson shares his musings on AI, both pre- and post-editing by AI software.

Author's email:

Attached is my draft titled "AI Musings – JA" for your thoughts, feedback, input or disposal as you see fit. For fun I ran it through ChatGPT and asked for edits for "readability and clarity," and it got a lot shorter. Interesting. There are some good revisions to syntax. That version is attached as "AI Musings – GPT." What I'm trying to get at is one part call to action and one part supportive perspective/advice. Since our meeting in La Jolla, I've been provoking many conversations with design practice leaders and finding a mixed bag of reactions. While there is much awareness about AI, there seems to be little understanding of how, or even if, to engage in the conversation as a leader. Hopefully my musings can help illuminate this.

AI Musings – JA (Original Draft)

When asked if I would consider writing a brief article for this issue of DesignIntelligence Quarterly, I initially gravitated to the general theme of *Leadership – The Business of Design*. It's a topic well within my comfort zone and a concern that has kept me up at night for much of the past two and a half decades. However, as I pondered the assignment, attempting to more specifically define a topic, thesis title or other such construct necessary to focus some one thousand words, I felt a gravity-like pull to the bottom of the email I received from DesignIntelligence's editorial staff. There at the bottom of the list of suggested themes or topics was "technology."

Me, attracted to the thought of writing about technology? There are many reasons this thought might make very little sense. However, the simple fact that many of us seem unable to ignore the unrelenting litany of opinions about how artificial intelligence (AI) will be a “game changer” for – *insert noun here as required to achieve desired dramatic effect* – almost makes this seemingly nonsensical thought an inevitability.

To be clear, I would not dare engage in an explanation of AI at any level, nor do I feel qualified to add my voice to the chorus of clairvoyants predicting the future that AI will deliver to the design profession. I write these musings simply to assist those of us feeling overwhelmed by it all – did I just admit that? – in an effort to help navigate to a positive, productive and exciting place for the design profession.

For those of you already fully engaged in thoughtful AI conversations, I applaud you. Please share your energy. However, from my observations and discussions with many design firm leaders, there remains a broad spectrum of lesser postures, including apathy, willful ignorance, confusion, avoidance, tentative engagement – mostly hoping that the “technology team” will deal with it.

The AI winds of change are blowing! We must fully engage. As design practice leaders and design practitioners we must lash ourselves to the helm rather than scurry below deck.

To navigate my way through the current maelstrom of AI information, I am working hard to be deliberate about adopting three particular mindsets. I say “working hard” because these mindsets don’t necessarily come naturally to my way of thinking, especially when thinking about technology.

Mindset 1: Stay at the centre of the conversation.

Ask what we want AI to do for us. Don’t simply wait to see what it offers. There are numerous apps, add-ons and tools using AI that are being rolled out for our daily use to sort our email, take our meeting minutes and the like. Adopt the ones that make sense for you. This will become table stakes for all well-run businesses. However, in our design processes, we can go even further. The design profession is well positioned to go far beyond the out-of-the box solutions, but we must *challenge* the tools to work for us rather than simply *allowing* them to work for us. The difference is subtle but important and tremendously exciting. We are at what may prove to be a VERY exciting time in the development of some very exciting tools. Let’s design the

manner in which these tools are used, which then influences how they are developed. This is not simply about learning and adopting new software. Leaders need to stay at the centre of this conversation, ask questions, challenge, interrogate ... design.

Mindset 2: Support, support, support in the design practice.

Don’t leave this to your technology teams to develop off to the side as “special projects.” Deploy and test in practice, on real projects, with design practitioners as much as possible. Set ground rules. This is not playtime, but it can be playful. Understand that incremental progress is still progress. Success does not always have to come in the form of radical innovation. Reinforce the impact of experimentation by creating platforms for sharing experiences across teams. Most importantly, be patient and be persistent.

Mindset 3: Be optimistic.

While I fully acknowledge the seriousness of some concerns around AI, I believe that optimism breeds progress. Deal with concerns head-on. They are real and there are many, such as responsible control, intellectual property, privacy, etc. However, remain optimistic, always working towards a way of finding how to make things work rather than reasons why they will not.

All three mindsets are inextricably linked. Nothing will become of your desire for AI to do something unless you support and test it in your practice and persist to find a way to make it work. These are early days, embrace that.

Overarching all these mindsets, an approach of humility is required.

Humility does not mean passivity. All three mindsets I have expressed are meant to be foundations for ACTION. Humility is simply a perspective meant here to position oneself within the AI technological evolution underway, not outside of it. Do not seek to control, seek to influence.

Describing our engagement of AI is akin to navigating a ship through a storm. Recognizing and respecting the storm’s unrelenting force of nature may at first appear a paradoxical comparison, yet it rings true for me.

Artificial Intelligence is a human construct. Let’s not abdicate our central position in its evolution just as it’s beginning to show real promise.

“

The AI revolution is a long game. There will undoubtedly be more fits and starts, steep inclines and plateaus, raging storms and calm days.

”

While hearing from Sheldon Glashow and Edward Feigenbaum at the recent Design Futures Council Leadership Summit on the Future of Technology and Applied Innovation in La Jolla, California, I was struck by the fact that both these individuals have both been working in the field of AI for more than half a century – both are in their eighties. Foundational thinking and technical advancements of AI began before my lifetime! Despite all the hype and hubris surrounding the release of ChatGPT, Midjourney, DALL-E and other such applications, the AI revolution is a long game. There will undoubtedly be more fits and starts, steep inclines and plateaus, raging storms and calm days.

In a recent interview by the Economist in Davos, Sam Altman, CEO of OpenAI (parent company of ChatGPT) appeared steadfast in his position that we must dial back our expectation for one societal-norm-changing development after another and expand the timescale used to assess meaningful change well beyond the cycle of app version updates.

As leaders of design practices, let us not be lulled into inaction by periods of incremental developments. Let us also not be redirected or scared off entirely by sudden and fierce thunderclaps of development.

“While the task is daunting, it is also filled with hope. We have the opportunity, in fact the obligation, to react creatively to our changing conditions.” – “A New Reality” by Jonas Salk and Jonathan Salk.

Editor’s Postscript: At the author’s initiative, the above article was reviewed by the ChatGPT AI application. All the application’s suggestions were incorporated into the final draft, which follows. For transparency, the author has vulnerably agreed to share both version his original and the AI edited draft in hopes this inside view of the process might inform still-timid, AI-averse or unfamiliar readers and advance them on their journey to AI discovery and understanding. We include the AI edited version intact, unedited below.

AI Musings – GPT (AI Edited Version / Draft #2)

When tasked with contributing an article for this edition of DI, I initially leaned towards discussing Leadership in the context of Design Business—a subject I’m quite familiar with and one that has occupied my thoughts for over twenty-five years. However, after much contemplation, I found myself drawn to a different topic listed in the email from Design Intelligence’s editorial team: Technology.

The idea of me, writing about technology, might seem odd at first glance. Yet, the overwhelming buzz around how Artificial Intelligence (AI) will revolutionize various sectors makes it almost inevitable to ignore. I want to clarify that I’m not here to delve into the complexities of AI or predict its impact on the design industry. Instead, I aim to offer some guidance for those feeling swamped by the rapid advancements in AI, helping them find a way to embrace these changes positively and productively.

Many in the design industry are already engaging in meaningful discussions about AI, and I commend their efforts. Nonetheless, there’s a wide range of engagement levels among design firm leaders, from apathy to active exploration, with many hoping their technology teams will handle the transition. It’s crucial, however, that we all actively participate in this shift. As leaders and practitioners in design, we must steer the conversation rather than hide from it.

To navigate through the whirlwind of information on AI, I’ve been focusing on three specific mindsets. These don’t come naturally to me, especially in the context of technology, but they are vital for our adaptation and growth.

1. Be at the Forefront of the Conversation:

We should define what we want AI to do for us, not just wait to see what it offers. While adopting AI tools for mundane tasks is beneficial,

the design industry has the potential to push these tools beyond their standard applications. We need to be proactive, questioning and shaping how these tools evolve to suit our unique needs.

2. Encourage Experimentation within Design Practices:

Don't sideline AI development as a 'special project' for the tech team. Integrate and test AI tools in real projects as much as possible. It's not about playing around; it's about making incremental progress and sharing learnings across teams. Patience and persistence are key.

3. Maintain Optimism:

Despite legitimate concerns around AI, such as ethical considerations and privacy, it's crucial to remain optimistic. Tackling issues head-on while focusing on solutions fosters progress.

These mindsets are interconnected; you can't fully explore AI's potential without actively supporting experimentation and maintaining a positive outlook. Embrace the early stages of AI integration with humility—not as a passive observer but as an active participant looking to influence its evolution.

Comparing our journey with AI to navigating a ship through a storm might seem dramatic, but it's an apt metaphor. AI, much like a storm, is a force of nature within the human domain. It's crucial that we maintain our position at the helm of this evolution.

Reflecting on insights from pioneers in AI at a recent leadership summit, it's clear that AI's development is a marathon, not a sprint. Despite the hype around new applications, this field has a long history and will continue to evolve through ups and downs.

Sam Altman, CEO of OpenAI, recently emphasized the need to temper our expectations for rapid, groundbreaking advancements in AI. This long-term perspective is crucial for meaningful progress.

As leaders in design, we must not be deterred by incremental advancements or overwhelmed by sudden breakthroughs. The journey ahead is daunting yet hopeful. We have a duty to respond creatively to these changes, as highlighted in "A New Reality" by Jonas Salk and Jonathan Salk.

Jim Anderson is an architect, partner and past chair at DIALOG in Toronto.

LEADING THE CHARGE

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LEADING THE CHARGE

Charlie Cichetti
CEO + Co-founder of Skema

AI software pioneer Skema blazes a trail to industry transformation.

Architects face intense pressure as they grapple with the challenge of integrating automation and AI into the design process. Combined with ever increasing design complexity, stringent regulatory requirements, and sustainability demands, these macro trends are driving a transformative shift in the industry. When it comes to adopting new technologies, business value is tantamount. Architecture firm leaders seek solutions for incorporating new methodologies into their work that yield tangible business advantages.

The tremendous amount of BIM data that architecture firms have amassed over many years can serve as the spark for transformation.

Every project yields BIM files that represent the firm's principals' and senior designers' best work. This 'best work' is not just a culmination of creativity and skill, but also encapsulates the distilled knowledge of proven solutions. These projects, and the BIM data within, represent a rich repository of intellectual property. However, until now they have remained largely inaccessible due to technical obstacles. Firms can unlock this wasting asset by applying advanced technologies including machine learning to this facet of the inherently valuable design process.



Our own software solution, Skema, aims to improve efficiency and productivity by using a firm's own designs and standards to reduce rote work and accelerate deliverables. Skema is the only design software that automatically generates highly detailed and fully integrated BIM models from conceptual design. Skema's goal is not to design a 100% finished building. Skema automates the repetitive parts of a programmatic design – roughly 50% – leaving the remaining 50% for the designer to focus on the signature spaces and experiential elements of the building.

Translating AI into Business Benefits

If we can implement AI the way other industries have benefitted from computational design, then moving forward from schematic design does not need to be a labor-intensive process. Skema represents a step change in design automation, delivering **business benefits** that other solutions cannot achieve. Among them are:

Win work with less effort

Architects can create high-quality design options to share with a client in a fraction of the time that is typically allocated for a project pursuit. Project pursuits become less risky.

Solve for detail design during schematic design

Roughly 30-40% of a design's fee budget is allocated to transferring schematic design to detail design, often through the work of a team of project architects and BIM experts. The firm can reallocate that substantial portion of the fee budget in any way they so choose. Perhaps they'll deliver designs faster, or at a higher level of quality assurance, or go after more work.

Earlier validation and design intent

When the initial design includes program data from the outset, designers can more easily produce validated options based on design intent, and aligned with the goals and objectives defined by stakeholders and the design team.

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Skema automates the repetitive parts of a programmatic design – roughly 50% – leaving the remaining 50% for the designer to focus on the signature spaces and experiential elements of the building.
”

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When designers are in control of the technology, and not the other way around, the technology can produce significant benefits.
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AI: “Automagical” results, driven by the designer

We believe the industry is ready to shift its attention away from the fascination of AI-generated visualizations to the thornier technical problems related to documentation and intellectual property. When designers are in control of the technology, and not the other way around, the technology can produce significant benefits.

Knowledge Reuse: Get more value from intellectual property

By tapping into the firm’s intellectual property in new ways, architects can unlock valuable insights and streamline workflows like never before. A firm’s design elements represent proven, successful solutions. Through Skema’s machine learning tools, designers can reuse those solutions, in the form of flexible, morphable “puzzle pieces” that they can use for rapid prototyping of different layouts and configurations to reach a desired aesthetic and functional design proposal.

Create BIM in Minutes

AI tools should almost instantly generate high-quality BIM models, significantly accelerating the creation of fee-generating BIM deliverables. By accomplishing what once took weeks in moments is nothing short of a paradigm shift in detail design, one that empowers architects to focus more on creativity and less on tedious tasks.

Adapting to new realities

Only through smart implementation of advanced technologies can design firms effectively and profitably produce designs that meet today’s requirements. Sustainability, for example, calls for an ever increasing level of analysis and sophistication, while the demand for repurposing vacant office buildings or other existing structures into housing, lab space, or other building types requires exceptionally skilled architects. As these shifts redefine the architectural landscape, firms must ensure their businesses are agile and profitable. Embracing advanced technologies not only enhances design capabilities but also strengthens the foundation of architecture firms, ensuring their resilience in the face of evolving demands and opportunities.

Modular Advantages

It's well known that modular design places an outsized burden on architects, as McKinsey's 2019 modular construction report assessed. Below are just two ways architects are re-examining their roles to effectively integrate computed modular principles into their designs, and how advanced technologies can help.

Knowledge curation and analysis

As architects establish a digital repository of knowledge from previous projects, modular becomes more attractive and financially feasible. This repository should encompass models and data from previous successful modular designs, including structural systems, materials, and construction methodologies. By analyzing the performance of modular components in various contexts, architects can make informed decisions for new projects.

Design frameworks and standardization

Architects must evolve from designing standalone structures to developing adaptable design frameworks. These frameworks consist of standardized modular elements that can be combined in different ways for each new project or proposal. Architects create these frameworks by extracting designs from successful past projects and incorporating them into a modular toolkit.

Designers of all stripes recognize that they need to add AI chops to their skillsets. Firms that encourage their staff to develop AI skills and enable on-the-job learning will be better positioned to stay competitive in an increasingly AI-driven landscape.

Join us.

www.skema.ai

Charlie Cichetti

Chief Executive Officer + Co-Founder

LEED Fellow, WELL AP

Charlie is proud to be one of the leaders in the green building industry. He has built a career around green building services, and leads four companies that hold sustainability leadership as a core value — Sustainable Investment Group (SIG), Green Building Education Services (GBES), Blue Ocean AEC, and Skema. These companies allow Charlie the opportunity to put his high-level LEED expertise and accreditation to work. He has led many green building projects (over 50 Million SF of LEED/ENERGY STAR/Cx-RCx) to LEED Gold, and even a few to the highest mark: Platinum. He has facilitated online and in-person training sessions that have helped tens of thousands of professionals obtain LEED accreditation.



THE EAGLE HAS LANDED

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April 2024



THE EAGLE HAS LANDED

Bob Hughes

Economist at DesignIntelligence

DI economist Bob Hughes offers a mid-year update.

In March 2022, the Federal Reserve began raising the target for the Federal Funds rate, the interest rate that banks charge each other for overnight loans, with the goal of bringing down surging inflation (the rate of increase in prices). The ideal result would be a deceleration of inflation from over 8% annually on the total Consumer Price Index (over 6% annually on the core Consumer Price Index) to the Fed's goal of 2% without causing a recession, a so-called soft landing. As with most economic trends, the process took some time, but with 2023 complete and the first quarter of 2024 well along, key measures of economic growth, inflation, and unemployment suggest that goal has been achieved. Indeed, as Neil Armstrong said after guiding the Apollo 11 lunar craft to a landing on the Moon on July 20, 1969, "...the eagle has landed."

Growth

Real Gross Domestic Product (GDP) rose at a 3.2% annualized rate in the fourth quarter of 2023 versus the third quarter and 3.1% from the fourth quarter of 2022. Our preferred measure of domestic demand, real final sales to private domestic purchasers excluding owners rent (aka real core GDP), rose 3.0% at an annual rate in the final quarter of 2023 and is up 2.9% since the fourth quarter of 2022. In fact, our preferred measure has shown growth in 13 of the last 14 quarters with the one negative quarter (Q4 2022) coming in at a barely negative -0.3%. Those results suggest a resilient economy with solid growth.

Inflation

On the inflation front, the total Consumer Price Index (CPI) is up 3.2% for the 12 months ended February 2024, well below the peak near 9% but still above the Fed's goal of 2%. The Core CPI, which excludes food and energy prices because of their volatility, is up 3.8% over the same period. However, our preferred measure, the CPI excluding energy and owners' equivalent rent (OER) is up 1.7% through February, the fifth consecutive month below the Fed's 2% target.

OER is a hypothetical number that attempts to estimate what homeowners would pay themselves to live in the house they own. However, nobody actually pays OER; there is no transaction. Yet, this hypothetical measure with no real transaction associated with it has a very large weight in the CPI index, nearly 27%, and is up a whopping 6.0% over the latest 12 months, triple the Fed's 2% goal. The large weight and high rate of increase is pushing up the total and core CPI results.

Labor

With continued growth in real GDP and real core GDP, and despite 11 interest rate increases by the Federal Reserve, the labor market in the U.S. remains tight. The unemployment rate came in at 3.9% in February 2024, up slightly from 3.4% in early 2023. The 3.4% rate was the lowest since May 1969. Furthermore, as of the end of January 2024, there were about 8 million open jobs in the private sector while February data showed the number of unemployed was about 6.5 million. Though there has been a rise in layoff announcements recently, the level is still low. Furthermore, initial claims for unemployment insurance remain at levels consistent with a tight labor market and solid economic growth.

The Fed

The last of the Fed's 11 rate increases occurred in July 2023 with the target rate set at 5-1/4 to 5-1/2 percent. With the on-going deceleration in inflation (called disinflation as compared to deflation or falling prices) speculation has been squarely focused on Fed Funds rate cuts. Numerous Fed governors as well as regional Federal Reserve Bank presidents have been strongly discouraging such speculation and reaffirming their commitment to reducing inflation back to their 2% target.

Inflation: A Deeper Look

Inflation in Brief

Inflation has been one of the biggest topics since the end of the pandemic. However, before the pandemic, inflation had been a non-topic for so long that many people had little experience with the nuances of prices and inflation. To help improve understanding of the topic, a few clarifications may be helpful.

First, the difference between price level and price change. Price level is the current price of goods and services. The Consumer price Index is a proxy for the general price level. It is a composite measure of the price of a basket of final consumer goods and services in the economy. The weights of the items in that basket are based on surveys of consumer spending and approximate the relative importance (weights) of all the final consumer goods and services purchased in the U.S. economy.

Inflation typically refers to the rate of change in the general price level. A steady rate of inflation such as the 2% target used by the Federal Reserve indicates steady 2% annual increases in the general price level; prices keep going up but at a slow, consistent pace. Accelerating inflation means prices rise at an increasing pace; inflation goes to 4% per year from 2% per year. If inflation slows but remains positive, it is known as disinflation. The rate of increase decelerates from 4% per year to 2% per year, so prices are still rising but at a slower pace. If the price level was to remain steady, then inflation would be 0%, sometimes called price stability. If prices or the general price level were to decline, then the inflation rate would be negative, also known as deflation. Deflation or falling prices for the general price level in the economy is generally associated with severe recessions and economic depression and is considered by most rational economists to be undesirable.

Visualizing the Recent Price Surge

In the chart below, the black line is the CPI excluding food, energy, and shelter. The blue line is the trend growth for the period 2011 through 2019, before the pandemic. The trend growth rate was just 1.2% meaning inflation for that basket of goods and services, consumer goods and services excluding food and energy because of their volatility and excluding shelter because it is mostly the hypothetical owners' equivalent rent estimate, was well under the Fed's 2% target.

Continued progress towards the Fed’s 2% objective is highly likely given that our preferred measure of CPI excluding energy and OER accounts for about 2/3 of the total CPI and is already under 2% while the OER (27% of the CPI) continues to slowly decelerate. The key question is timing. The OER price index tends to move very slowly and given the relative weights of OER and our preferred measure, if the Fed were to wait until the CPI or core CPI is actually back to 2%, then the Fed Funds rate may remain at current levels for an extended period. If the Fed were to be satisfied with a disinflationary trend, then rate cuts could come before inflation measures reach the Fed’s target. A third possibility is the Fed decides to begin rate cuts before inflation reaches the 2% target but spreads them out over an unusually long period of time. The December Fed projections imply three ¼-point cuts in 2024 leaving the Fed Funds target at 4-1/2 to 4-3/4 percent at the end of 2024.

Another possible scenario is some other developments force earlier and/or more rapid rate cuts. While trends in activity, inflation, and labor are favorable, a shock to the economy could threaten those trends and the outlook. Shocks are, by definition, unpredictable. The good news is that with the Fed Funds rate at 5-1/4 to 5-1/2 percent, there is plenty of room to make aggressive, substantial cuts to respond to any negative shock.

Outlook

An old saying among stock market veterans is markets often “climb a wall of worry.” There’s always something to worry investors. Today is no different. Two of the biggest sources of worry are global events and Washington dysfunction, especially in a Presidential election year.

War in Israel and war in Ukraine are major concerns. Most horrifying are the humanitarian disasters in both places. Beyond that, the Israel/Gaza conflict is already impacting global trade in critical shipping lanes, threatening supply chains and commerce. Defending the cargo ships passing through the region has drawn the U.S. and allies into limited military engagement. Deeper involvement is a possibility, but the probability seems low.

The unjustified invasion of Ukraine by Russia is significantly increasing the risks of wider regional war between a belligerent Russia and the NATO alliance. More than a few analysts have drawn the comparison between Russia’s aggression and Nazi Germany as fears of World War III seem to be becoming less remote.

Inflation: A Deeper Look (cont.)

Following the pandemic, price increases accelerated, pushing the price level well above the pre-pandemic trend. As of January 2024, the price level was 10.5% above where the price level would have been had the pre-pandemic trend inflation rate of 1.2% persisted.

The red line is the trend growth rate over the latest 12 months through January 2024. The recent trend growth, the current inflation rate, is 2.0%, above the pre-pandemic 1.2% pace but in-line with the Fed’s target for overall inflation.

These numbers help explain why consumers may not feel the benefit of decelerating inflation or disinflation. While the rate of increase in prices has slowed, the price level is high, much higher than just a few years ago. The Fed may have successfully engineered a soft landing, bringing inflation down, but consumers feel the pinch of higher prices (price levels) on family budgets.

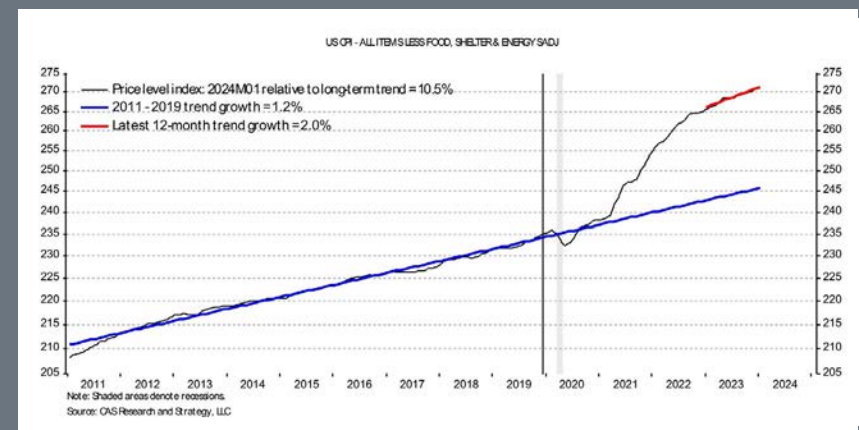


Chart 1, author provided

Transitory Inflation

A second important point is that the recent price jump, or surge in inflation, is far less persistent than the one that occurred in the 1970s. Fed Chairman Powell and the other Fed members expected the inflation surge to be “transitory,” meaning high rates of inflation were unlikely to be sustained for a long period. The term “transitory” has no specific time period associated with it. When inflation failed to return to pre-pandemic levels within a short time, 6 or 12 or even 18 months, many pundits took the opportunity to slam the Chairman for his “transitory” statements.

International relations, growing fiscal imbalances, government shutdowns, debt defaults, immigration and border policy, industrial policy, even basic U.S. human rights and freedoms are areas in need of policy attention. National security, both traditional forms of warfare and cyber warfare, is under a growing threat. The latter is particularly concerning in an election year with heightened concern over election security and the potential for misinformation campaigns, from domestic and foreign sources, to cause chaos.

These threats are growing at a time of extraordinary, nearly complete dysfunction in the U.S. Congress. The intense partisanship, lack of honesty and integrity, and extreme hostility by so many elected officials as well as political party leadership, state officials, and even the general public have paralyzed policymaking.

Despite these issues, the outlook for the overall macroeconomy is generally positive with favorable trends in growth and inflation, a strong labor market, and eventual Fed rate cuts likely. However, there are areas of concern. Commercial real estate – primarily office space and retail – remains in crisis, still suffering from the fallout of the pandemic and surge in remote work. The tug-of-war to get workers to return continues with no clear victor on the horizon. The disruption to CRE is impacting the banking system. With a substantial amount of property loans coming due and property values depressed, the crisis in CRE and the banking system is still unfolding. While the crisis is a significant problem for the players involved, from a broader macroeconomy perspective, the crisis likely isn't a major threat. The banking system overall is generally sound, so any individual bank problems are likely to be contained.

Final Points: Resilience & Adaptability

Threats from geopolitical events and a horribly dysfunctional and bitterly partisan Congress notwithstanding, the economic outlook is reasonably upbeat. Economic growth is likely to continue, inflation should decelerate further, and a solid labor market will continue to support consumer spending which will in turn support future growth and investment.

Inflation: A Deeper Look (cont.)



Chart 2, author provided

However, a simple comparison to the 1970s shows that the Chairman was right.

In the chart above, the green line is the 12-month percent change in the current CPI excluding food, energy, and shelter. The purple line is the same index from the period 1968 through 1998 overlaid on the 2015 through 2045 period. The peak inflation rates were aligned with 1975 matching up with 2022.

From the peak in 1975, it took 22 years, until 1997, for this measure to hit the 2% target. From the February 2022 peak, it took less than 2 years, until September 2023, to return to the 2% threshold.

While Chairman Powell and the Fed will get the criticism – or credit depending on your perspective – it's really the resilience and flexibility of the economy that was largely responsible for the deceleration in inflation. Monetary policy certainly influences levels of activity and prices, but businesses adapting to new operating conditions and changes in consumer demand allowed supply to increase and significantly contributed to the reduction in upward price pressures.

Along with continued economic growth will be continued restructuring of the economy. Work from home remains an unsettled issue, new technologies will transform business processes, reconfiguring global supply chains will impact investment decisions, demographic trends will drive interstate migration, and immigration will help drive population growth. Furthermore, environmental challenges are mounting as climate change distorts weather patterns, biodiversity dwindles, pollution spreads, landfills expand, and toxic chemicals and materials threaten human health.

At the micro level, all businesses need to be adaptable to respond to the constant change in the U.S. and global economies. Staying abreast of the ongoing changes and responding to both threats and opportunities must be standard operating procedure.

The built environment industry is in a unique position to positively impact the both the environment through development of a circular materials economy, adaptive reuse practices, and regenerative building design, and human health and wellbeing through healthier material selections, more thoughtful human-centered design, and nature-based solutions including biophilic design. Importantly, this can all be accomplished while growing a thriving and profitable business.

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Markets often “climb a wall of worry.”
”

Bob Hughes is an economist at DesignIntelligence and is a frequent contributor to DI Quarterly.

OBSERVATIONS

“Don’t allow your mind to tell your heart what to do. The mind gives up easily”
— Paulo Coelho

“The relationship between commitment and doubt is by no means an antagonistic one. Commitment is healthiest when it is not without doubt, but in spite of doubt. (p. 21)”
— Rollo May, *The Courage to Create*

“To yield readily-easily-to the persuasion of a friend is no merit.... To yield without conviction is no compliment to the understanding of either.”
— Jane Austen

“I meant what I said and I said what I meant.”
— Dr. Seuss,
Horton Hatches the Egg

“Conviction is worthless unless it is converted into conduct.”
— Thomas Carlyle

“If you have a strong purpose in life, you don’t have to be pushed. Your passion will drive you there.”
— Roy Bennett

“Who you are in public is a test of your conviction; who you are in private, integrity.”
— Criss Jami, *Healology*

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