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Q4 2024

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CONTEXT: CONSEQUENTIAL QUESTIONS

Over the course of 2024, we have looked at Connections, Conviction and Convergence in our cascading examination of critical thinking among the design professions in Q1, Q2, and Q3. In Q4 we focus on Consequential Questions, the voices they enable and the decisions they invite. This issue serves as prologue to our annual conference in La Jolla on the same theme, to be held in January 2025. At the root of these essays and interviews is a consistent idea: seeking diverse perspectives and connecting the uncommon yields unconventional thought – the kind we need these days. The kind built into the name of our organization: DesignIntelligence. As we seek to ask and answer the right questions in times of planetary significance, intelligence seems more important than ever.

It struck me that Steve Jobs - widely heralded as one of the most radical – and influential – thinkers of our time - might know something about this subject. He was beyond passionate about design and held a top-tier intelligence. In a recent Inc. Magazine piece,[1] Jeff Haden wrote:

> When Steve Jobs was building Apple, luck mattered. Right place. Right time. Right person, idea, market, or audience. Ask any extremely successful person, and they'll say luck played a role in their success. Unfortunately, though, while you can put yourself in position to be luckier, you can't control luck.

> But you can, to a surprising degree, control how smart you are. You can improve your ability to learn more quickly. You can improve your judgment. You can improve your decision-making skills. And you can learn to identify smart people, which is a benefit because it's hard to surround yourself with smart people if you can't spot smart people. So, what did Jobs feel was the best indication of high intelligence?

According to Jobs:

> 'A lot of it is memory. But a lot of it is the ability to zoom out, like you're in a city and you could look at the whole thing from the 80th floor down at the city. And while other people are trying to figure out how to get from point A to point B, reading these stupid little maps, you can just see it in front of you. You can see the whole thing.'

And you can make connections that seem obvious to you, because you can see the whole thing.

That's the thing about intelligence. No matter how much information you can retain -- no matter what degree of crystallized intelligence you possess -- having a great memory won't necessarily help you make better decisions; we all know smart people who at times struggle to make a simple decision.

What Jobs describes is fluid intelligence, the ability to learn and retain new information --and to use that knowledge to solve a problem. To learn a new skill. To recall existing memories and modify them with new knowledge. To be not just book smart (not that there's anything wrong with that) but also smart smart. For Jobs, that's step one on the road to high intelligence. He felt the smartest people excel at making connections. But you can't make connections unless you collect a variety of experiences you can then connect.

As Jobs said:

> 'One of the funny things about being bright is everyone puts you on this path. To go to high school, go to college. [But] the key thing that comes through is they had a variety of experiences which they could draw upon in order to try to solve a problem, or attack a particular dilemma, in a unique way. One of the things you'll get a lot of pressure to do is go in one direction. What you have to do is get different experiences. To make connections which are innovative? To connect two experiences together? You have to not have the same bag of experiences as everyone else. Or you'll make the same connections.'

As we conclude our year's worth of editorials and essays in this Q4 compilation, it seems only fitting to consider making different connections and let those to guide us as we seek to properly ask and frame the right questions: Consequential Questions.

Here's what you'll find within to shape the inquiry:

- Dave Gilmore frames our January 2025 La Jolla conference with a set of compelling questions in, *For Consideration*.

- In his essay, *Questions and Consequences*, Scott Simpson reminds us of the value of inquiry and its outcomes.

- In her written examination, *To Speed or Not to Speed?* DeeDee Birch poses a single consequential question: What is the case for slowing down?

- In his view from the U.K., Paul Hyett reflects on the world, the U.S. presidential election and the architect's duties in *Consequential Questions (The Need for Truth)*.

- Bob Hughes steps outside his comfort zone to ask what is the proper role for government in society and the economy? - and pose larger, more provocative and harder-to-quantify questions in his introspective piece, *Measuring Governance*.

- Form4's John Jennifer Marx asks *Has Modernism Failed Us* in a reflective analysis of modernism's impact, current state and the possibilities inherent in Modernism 2.0.

- Enarche President Dez Joslin shares marketing and business development expertise in *The Mark of True Transformation: Key questions* to help you leverage a unified brand that reaches strategic goals.

- From CO Architects, Fabian Kremkus delivers a case study on the potential of large-scale healthcare projects to deliver carbon neutral or carbon positive results in his contribution entitled: *Can Energy-Intensive 24/7 Buildings Be Carbon-Neutral?*

- My reflections in *I Think We Can: Thoughts on seeking questions*, decisions and their consequences, look into decision making and critical thinking best practices by recognized leaders.

- In an interview that preceded her presentation at DI's Fall New York conference, Adrian Parr Zaretsky, dean of the University of Oregon's College of Design, shares her thoughts on *Making Design Relevant* and considers four global issues and trans-environmental thinking.

- In *Overcoming Perceptions*, Arup's Lynn Simon's interview offers insights on perceptions and persuasion and overcoming resistance in the pursuit of systemic solutions around the responsibilities related to environmental stewardship.

- From global giant Mott Macdonald, Clare Wildfire and Lissadell Karalus-Breinholt update a white paper recently published in Smart Cities World.

After reading the contributions of such an experienced set of voices, we hope you'll be just a little bit better at Connections, Conviction, Convergence and Consequential Questions.

Enjoy!

[1] 42 Years Ago, Steve Jobs *Only Needed 13 Words to describe the Number 1 Sign of Intelligence*, Jeff Haden; Inc. Magazine, June 6, 2024

Michael LeFevre, FAIA emeritus is managing editor of DesignIntelligence Quarterly, senior fellow in the Design Futures Council and author of Managing Design, (Wiley 2019, an Amazon #1 bestselling new release.)

CONSEQUENTIAL QUESTIONS
FOR CONSIDERATION

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CONSEQUENTIAL QUESTIONS
FOR CONSIDERATION

Dave Gilmore

President and CEO
of DesignIntelligence

Dave Gilmore poses questions and contemplates disruption convergence scenarios.

As we consider the "now" and soon arriving "then", we are confronted with our own lack of initiative regarding the consequential questions we ought to have posed much earlier. Today, we are faced with situations and circumstances most are utterly unprepared to address or respond to with adequate thinking, speaking and behavior that will yield win/win outcomes, the best for the most.

Consider the multiple disruptions on the immediate landscape of human experience. The inventory alone is daunting, but when we consider this multidimensional dynamic converging to create a radically altered reality, we can be overwhelmed to the point of frozen inaction. Perhaps the multiple, repeated disruptions occurring over the past few decades have unconsciously dulled our sensibilities and resolve to act, and therefore, the noted current convergence is more of the same.

What's before us now that we must thoughtfully consider?

1. Accelerating climate change destruction.
2. Escalated worker dissatisfaction triggering work stoppages.
3. Societal realignments and polarization.
4. Massive demographic shifts.
5. Strategic leverage of misinformation and disinformation.
6. Arrival of the spatial web.
7. Ongoing economic ambiguity.
8. Natural resource degradation.
9. Dramatic progression of artificial intelligence.
10. Intercountry trade weaponization.
11. Redefined work and working places.
12. Unprecedented wealth transfer.
13. Pervasive digital transformation.
14. Widening interstate conflicts.
15. New and threatening geopolitical alliances.
16. Global energy transition coupled with fragile energy security.
17. Deepening institutional mistrust.
18. Private money domination of markets.
19. Unprecedented government debt levels.
20. Increasing civil unrest globally.
21. Widening economic divide between haves and have-nots.
22. Growing forced displacement of people.
23. Global supply chain uncertainties.
24. Explosive digital infrastructure growth.
25. Persistent cyber insecurity.

All this seems truly overwhelming when considered together. When understood as converging phenomena, such an inventory is nothing short of terrifying.

> " What are the implications and ramifications of accelerated climate change destruction converging with explosive digital infrastructure growth, global energy transition, fragile energy security and natural resource degradation? "

Disruption Convergence Scenarios

At DesignIntelligence, we've been building "disruption convergence scenarios" to better understand the present ramifications and potential future implications of these dynamics.

For example, what are the implications and ramifications of accelerated climate change destruction converging with explosive digital infrastructure growth, global energy transition, fragile energy security and natural resource degradation?

How about the convergence of societal polarization, pervasive digital transformation, widening interstate conflicts, global supply chain uncertainties and persistent cyber insecurity?

Or what about the combination of the dramatic progression of artificial intelligence, the arrival of the spatial web, strategic leveraging of misinformation and disinformation and the domination of private money in markets?

The design professions are front of mind when we do this work, and we're constantly asking, "What is the value of the design professions in designed solutions and designed perspectives that should be leading in these scenarios?"

A sampling of other consequential questions come to mind for you to consider:

- How did we collectively allow the Earth to be so assaulted that we are now facing existential threats as a species? (Hint: Ask the mirror. Own the responsibility.)

- What votes did we cast that assigned inadequate leadership, allowed for centralized governmental irresponsibility and myopia and set us on the course where so many disruptions are now our common reality?

- What core values and ethical standards for your personal and professional life have you established and enforced, or neglected and compromised, that frame both aspiration and reality for you and your work?

- What investment decisions have you made in the past 10 years that you can objectively state were wholly responsible to the environment and society that yielded both "good" and "well" outcomes?

- What can you as a design professional bring to the crisis decision-making and action table to positively and effectively address the disruptions noted above?

Lots to consider in this brief article. We're wondering what you're wondering about your value and personal/professional responsibilities with all this in the forefront. We hope you'll join us in January (15-16) in La Jolla, California, for the Design Futures Council Leadership Summit on Consequential Questions Demanding a Voice, to examine these issues in person, together.

Dave Gilmore is president and CEO of DesignIntelligence.

I THINK WE CAN

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I THINK WE CAN

Michael LeFevre

Managing Editor, DesignIntelligence

Thoughts on seeking questions, decisions and their consequences.

Just a Few

As I reflect, I've only made a handful of significant, conscious, major decisions over the course of my life. Amazingly, each worked out for the best. All of which prompts the questions: Perhaps I should have made more decisions? Perhaps I should have asked more questions?

These personal decisions include choices such as getting married, moving to a new city and changing jobs. Even changing careers once. Certainly, having a daughter ranks near the top of the list. On the professional front, a handful of key decisions about projects, people and paths were important in retrospect.

There are many accounts of successful entrepreneurs and businesspeople who have risen to the top only to fail miserably. These self-starters and business builders are noteworthy for their often-priceless experience with the volatile, cyclical nature of success.

In contrast, I've had no major failures as measured by financial or personal outcomes. Why? Because I've chosen not to take the big risks. They didn't suit my personal risk profile. While I may have had ideas and inclinations to do so, I've never created a company or put my family's fortune at risk by starting a new venture. I've always preferred to work as part of a team and within an established organization that ran the

business to guarantee a relatively predictable income for all of us. For me, this was the best path to allow my creativity to flourish and for smaller, calculated risks to be bracketed, supported and protected by the organization's system of checks and balances and diverse offerings. Along the way, I was honest in assessing my ability to make good decisions and, after seeing my true capabilities in this area, sought to improve by almost any means necessary.

But having had the success I enjoyed as a result of my major decisions, I've often wondered: Where would I be, had I taken more (or bigger) shots? Or asked different questions? I guess I'll never know, because we can't go back. But we can continue to be students of the question-posing and decision making game and continue to learn and explore. In this essay, I'll attempt just that and share it with you.

Now and Then

Why a deep dive into consequential questions and the decisions that follow? Why now? Simply because the impact of our decisions as leaders of the built environment has never been greater. And the questions that precede these decisions are even more impactful. Converging social, environmental, economic and physical responsibilities now conspire to connect our built environment in new and more significant ways for us all. We have transcended the specter of designing stand-alone projects while mindless of their connections to larger contexts and systems. In matters of design, we're taught there is no correct answer. But now that the stakes are higher than mere art, architecture and buildings, many of our answers and solutions carry much greater weight or impact than others. They are more correct, or at least, more important.

As leaders, we are negligent when we ignore our broader duties. And how best to learn in such a critical time? By looking to the best! The need for us to look beyond our own profession and learn from the best is immediate and immense. As we have done for all the 30 years of DesignIntelligence and the Design Futures Council, we look not only to our own industry's elite, but also beyond that to the best of the best in all disciplines. Let's begin.

Be Prolific

Paraphrasing Nobel Laureate Linus Pauling: To have good ideas, have lots of ideas. Synthesizing Michael Jordan's advice: To be ready to make the big (or right) decision when the time comes, you need to have taken thousands of practice shots (decisions, in our case) in preparation. You must be ready – mentally, having visualized the scenario, and physically, through hard work and discipline – when the opportunity (to ask the right question) presents itself.

Know Yourself and Others

The experts tell us that to become better thinkers and chart better paths, we must begin by knowing ourselves. They suggest we look to those we admire as role models and extract and emulate the traits they exhibit. To appeal to a broader readership, I'll stretch myself beyond my familiar, comfortable favorites in these categories (typically exemplars that were humble and politically aligned with my own views) and consciously include some more controversial examples for the sake of an expanded demographic and to stretch our collective learning curves. To listen, look and maybe even learn from the perspectives and processes of others who may not be like us. No pain, no gain, it is said.

Can We Learn from the Best?

To learn from the experiences of other experts, let's look at some classic examples of the decision process. Each begins with the ability to seek and find the right question. To better understand, let's draw from a few exemplars typically seen as being good, or even simply illustrative or informative, at question framing and decision making.

Classic Case Studies

The Cuban Missile Crisis

Chronicled in books and film, President John F. Kennedy's handling of the Cuban Missile Crisis in October 1962 is universally heralded as a fine example of keeping cool under pressure. Not just any pressure: The fate of the world hung in the balance and Nuclear War was a strong possibility. With Communist missiles aimed at U.S. shore and pressure mounting, JFK was able to keep his head and succeed as a leader. How did he do it? By relying on a diverse team of experts, by availing himself of all the intelligence he could, asking the most important questions and in his final, confident act, by calling his opponent's bluff. Faced with world-changing stakes, even the Communists would come to their senses, JFK reasoned. And they did.

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> I have a similar dream on a much more modest scale, a dream that all design professionals can rebuild their thought processes, values and decision making skills to regain the respect we believe we deserve. That we can learn to ask the right questions and grow in our critical thinking skills.
>
> Only by will, determination and a plan of action to change will we achieve that dream.
>
> ————————————— "

Abraham Lincoln

During his presidency, Lincoln met regularly with cabinet members and advisers to elicit their opinions and gather information before making decisions. To broaden his perspective, in a forbear to current social media and opinion polling, he sought the opinions of ordinary citizens and invited them to the White House to share their views. Genius! What a fine way to capture the pulse of popular sentiment: Ask them. In retrospect, he likely leveraged these tactics to inform what is popularly termed Lincoln's Decision: On January 1, 1863, he issued the Emancipation Proclamation that freed the slaves within the Confederacy.

Warren Buffett

How does Berkshire Hathaway's investment guru ply his trade? One thing is for sure: He takes the long view. By considering distant horizons, he is able to see and think clearly and manage market volatility. By constantly asking what if, he avoids the black swan fallacy of extrapolation and prepares for unpredictable outcomes. His hedge is to manage a diverse portfolio, keeping his options open and in multiple baskets. Those strategies, coupled with operating with a great team, with the best tools and from a position of abundance, serve him well in pursuit of financial returns.

New Role Models?

These classic cases serve well, but can we benefit from any newer examples from women leaders or in the context of social media and the era of disinformation? We can.

Caitlin Clark

Since joining the WNBA in recent weeks, basketball star Caitlin Clark has faced the harsh realities of her entry into the league. Now, under the intense scrutiny of the public eye and the fierce competition of many battle-scarred veteran competitors, she has faced egregious fouls, hard hits and tough times. Her recent postgame reaction to a flagrant foul committed against her?

"Yeah, I wasn't expecting that. But it's just 'Respond, calm down and let your play do the talking.'"

She asked herself: What good will come of complaining. A second example is her reaction to being snubbed for the U.S. Olympic team: "I'm excited for the girls that are on the team," she shared.

Emotionally mature, intelligent responses to be sure. And good decisions, compared to the alternatives of starting an on-court and/or social media-based feud with the offending opponent and snubbing committee.

Benchmarking: An Honest Assessment

As question framers, decision makers and leaders in the built environment industry, how do we compare against these greats from the fields of politics, geopolitical warfare, business and sports? In most cases, not very well, I'm afraid. Why not?

My thoughts go immediately to our training and culture. In design schools, at least, we are trained and rewarded to diverge, play and push the envelope of risk. Such is the process by which great design is realized. Counterintuition, changing scales and the intentional inefficiency of going in circles and looking backward are de rigueur in design decision making. While we are taught in programming classes to "ask the right questions," little, if any, discussion is given in architecture school to learning how to managing risk or making good, efficient or "correct" decisions.

Contrast that culture with the curricula and student mentalities seen in construction schools, business schools, medicine (e.g., triaging) and almost all non-design disciplines. Assessing and managing priorities and allocating and reducing risk are not just more valued than they are in design, they are predominant. The "main" thing, or the "only" thing, if you will. Everything else is a distant second in the non-design disciplines.

Need convincing? Design projects in firms across the country are replete with countless examples of staff architects working into the night studying handrail design options while their project is wildly over budget. Such actions threaten project viability rather than working to rebalance their designs within their budgets. No matter how you look at it, that's bad decision making. Perhaps by the project manager who assigned the task, or the individual who irresponsibly fritters away their scarce time (and the firm's fee) on doing the wrong thing at the wrong time. It's the equivalent of rearranging the deck chairs on the Titanic – a classic sign of misdirected, aberrant decision making and a clear failure to ask the right questions.

All this despite our often-misguided self-confidence as leaders and choreographers of large, collaborative design teams. Too often, our self-praise and that of our design instructors seems more akin to the proverbial "participation trophies" given to our children playing soccer and little league. We declare ourselves to be lucid thinkers and believe it to be so. It is only when we are put to the test in project applications that our lacking skills become manifest: Over budget! Late documents! At these too-frequent junctures, we are then forced to rely on our more skilled teammates such as construction managers, trade contractors and owners to supply the clarity of thought and emotional intelligence we need to regain balance. Those of us who bemoan the greater incomes of our partners need only look to their question framing and risk management skills – and their commensurate value and rewards in the marketplace – for the answers.

Hope Abides

My ranting (or is it simply stating the necessary truth?) aside, what can we do as professionals to become better at decision making? How can we effect a value shift so we can more closely align with those of our clients and partners – without throwing in the towel on excellent design and the growing number converging forces we now must accommodate? Here are a few suggestions.

Practice

As in the old saw about how you get to Carnegie Hall, simply acknowledging and working at the discipline of making decisions offers much. Practice, practice, practice. With time and commitment, you'll improve. We do it every day, but do we do it with rigor and emotional intelligence?

Science and Discipline

Like most things we do in a civilized world, decision making is now a science. Study its principles and lessons. Study and learn from the greats. Borrow, steal, adapt and internalize the great strategies from other disciplines and use them for good in architecture. Be smart. Use the best tools available to support, document and enable decision making. AI is here. Embrace it. We'll still need you for the final curation, judgments and decisions, but perhaps we can let machines carry some of the load.

Diversity and Expertise

Rather than continuing to associate with sloppy, undisciplined thinkers, find a new team. Build it yourself. Construct a team with shared values that exudes positive decision vibes and cares about its outcomes rather than maintaining an attitude of skeptical recalcitrance and exhibiting "energy vampire" aspirations. Bring new, diverse skills, experience sets, backgrounds and people types into your processes. You'll be better for it.

Have a Dream

I recently visited Memphis, Tennessee, a city famous for its barbeque and blues. But our stop at the Lorraine Motel – the scene of Martin Luther King Jr.'s 1968 assassination – was most moving. In his legendary I Have a Dream speech delivered in Washington, D.C., on August 28, 1963, Dr. King spoke of civil rights and a future in which all mankind could be created equal.

I have a similar dream on a much more modest scale, a dream that all design professionals can rebuild their thought processes, values and decision making skills to regain the respect we believe we deserve. That we can learn to ask the right questions and grow in our critical thinking skills.

Only by will, determination and a plan of action to change will we achieve that dream.

I hope we do. I think we can.

Michael LeFevre, FAIA emeritus, is managing editor of DesignIntelligence, senior fellow in the Design Futures Council and author of "Managing Design" (Wiley 2019), an Amazon #1 bestselling new release.

QUESTIONS AND CONSEQUENCES

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QUESTIONS AND CONSEQUENCES

Scott Simpson

Design Futures Council Senior Fellow

Scott Simpson reminds us of the value of inquiry and its outcomes.

Design is one of the few endeavors that generates more answers than questions. For any given program or budget, there are always multiple possible solutions. The hard part is not in creating new ideas but in choosing the single best approach among many that should be implemented. The signposts which point in the right direction come in the form of questions. A skillful designer knows that a well-posed question opens the door to new ways of understanding a problem, which in turn leads to better outcomes.

The irony is that the most frequently asked question ("What will it look like?") is the least useful because it prioritizes appearance over all other factors. Aesthetics are important, to be sure, but they are far from the whole story. What's more, focusing too closely on a single criterion obscures many other intriguing possibilities. For those who believe "form follows function", logic suggests that appearance may be the last thing to consider, not the first.

Because design is a journey of discovery, we don't know how the trip will end before we begin. With so many factors to consider along the way, some known and some unknown, the path forward is fraught with surprises, both good and bad. Like any trip to a new and exotic location, the journey itself can have a profound impact on where things will end. Being open to new perspectives and new approaches fertilizes new ideas, which often can entirely reframe the original question. The more curious we are, the better results we get. It's a virtuous cycle.

A good designer will always challenge the status quo and look around corners to anticipate the unexpected. A good designer will dig deep to understand the client's fundamental goals and objectives, especially those not immediately obvious. A good designer will also work without prejudice, allowing the process to play out on its own terms. At the same time, good designers must always be responsive to the inevitable constraints of program, budget, schedule and prevailing codes and standards. It is in the push/pull between the givens and the unknowns where unique solutions reveal themselves.

Properly understood, good design *always* creates value in excess of cost. In fact, this may be the single most important aspect of what it means to be a designer. Good design breaks new ground, devising different ways of doing things. Value propositions are always multidimensional, not singular. Aesthetics are important as noted above, but in addition to appearance, there are issues of engineering (how things hold together, how a comfortable environment for the occupants is maintained, how much energy is used, etc.) as well as the building's ability to adapt over time as the needs of the users evolve (and they always do). One huge issue – too often overlooked by clients and architects alike – is the impact of long-term maintenance and operation costs over the project's useful life. And then there is the ever-present question of ROI: how quickly the investment will provide payback to the owner. There are also larger societal issues to consider, such as the effect of a new project on the environment, where the materials are sourced and the labor involved in delivery. All this makes for a big ball of wax. How are we to make sense of it? A few key questions may offer some guiderails.

> ## The more curious we are, the better results we get. It's a virtuous cycle.

Why does the world need this project?

Why is it being undertaken in the first place? What are the client's underlying goals and aspirations, how will they be measured and why are they important? Are there ways other than building something new that would satisfy those goals? While these questions might seem obvious, they are not always directly articulated. It's important to dig a little deeper to get the full picture.

How will the new project enhance the client's enterprise value?

Bear in mind that owners build projects to make money, not spend money. Whether they involve new construction or renovation (or both), buildings are an investment. What are the true economic drivers and how are they made manifest? The answers could change dramatically based on the client's ownership strategy (short-term or long-term).

Owners have many different value propositions. For retail, it's sales volume. For hospitality, it's occupancy and rack rates. For colleges and universities, it's enrollment. For medical centers, it's ALOS (average length of stay). For performance venues, it's boosting attendance. For biotech firms, it's cycle time (how long it takes to bring a new therapeutic drug to market). And so forth.

What are the project's true life cycle costs?

Most new buildings are in productive service for about 50 years, and over that time, long-term owners will spend far more in maintenance and operations than in the initial capital expenditure. Understanding the overall life cycle costs up front will enable designers to make much better decisions when selecting structural and MEP systems, devising circulation patterns and in materials selection.

How flexible is the plan?

Most buildings undergo considerable change during their lifetimes. Those changes may be hard to predict, but they *will* happen. Smart architects understand this and design with change in mind. They know that roofing and the MEP systems will likely be replaced at least two to three times, that there will be occasional need for code upgrades and that new technologies will upend traditional planning norms (just consider the working-from-home phenomenon that has disrupted traditional office design).

What are the project's social and civic implications?

All buildings exist in relationship to their environments. They have an impact not only on their own occupants but must also be "good architectural citizens" in the civic realm. This greatly expands the notion of who the "stakeholders" are. Such considerations are not always part of the design brief, but they should be.

What are the environmental implications?

Where will the building materials come from? How are they sourced, processed and transported? Who does the work and how are they compensated? What becomes of the construction waste? What kinds of energy systems will be used and what are their near-term and long-term effects? Since about 35% of all construction materials wind up in the dumpster and worldwide construction activity contributes about 45% of all carbon emissions, these important questions have long-lasting impact.

Making buildings is one of the defining characteristics of the human condition. In a very real sense, architecture is how we tell our stories. People are aways trying to find ways to improve how they live, work and play. To find the best answers, we need to start with the right questions – or face the consequences.

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

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(THE NEED FOR TRUTH)

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CONSEQUENTIAL QUESTIONS (THE NEED FOR TRUTH)

Paul Hyett

Co-founder of Vickery Hyett Architects, Design Futures Council Senior Fellow

In this view from the U.K., Paul Hyett reflects on the world, the U.S. presidential election and the architect's duties.

European Movements

The light of western democracy may not yet have dimmed, but it is certainly flickering, and the closing quarter of 2024 will have a profound impact on our political, social and economic direction for decades.

Social unease in Europe over recent years has prompted drifts, sometimes even lurches, towards the radical right across the continent. In Czechia, Slovakia, Hungary, Croatia and Italy, nationalist right-wing governments have gained power, whilst intense pressure from the right is also manifest in France, the Netherlands, Belgium and Austria.

Germany – since World War II an exemplar of social democracy – is seeing growing support for the far-right AfD (Alternative for Germany) party, which, until recently, was under police surveillance for its extremist views and occasional expression of neo-Nazi sympathies.

Similarly, pressures from the right have been growing in Estonia, Latvia and Poland, though 2023 saw the latter country break trend and reject its governing right-wing Law and Justice Party.

Even the U.K., normally a bastion of political stability, has seen a rightwards drift across all its mainstream parties, with new neo-liberal and reactionary groups emerging to undermine the "social contract" and challenge the hitherto long-standing political status quo.

The U.S.A. Choice, Its Implications and Antecedents

But as I write, all eyes move back to the United States and November 2024, to a spectacle "the likes of which we have never seen before," to quote one of its participants. No presidential election in that still-great democracy has ever offered such a stark choice and contrast: a self-identifying Black woman against a White man; a professionally educated lawyer against a freewheeling businessman; a one-time public prosecutor against a many-times-convicted felon. You just couldn't write such a script!

The outcome of these struggles will have profound implications for architecture and its duty, not only to serve the public interest, but also to fulfil its most basic role: the provision of safe shelter. All of which takes me again to Neville Chamberlain of "peace in our time" fame, consequent upon his efforts to broker an accord with Hitler.

Prior to becoming prime minister, Chamberlain had, as chancellor of the exchequer, recognised the interrelationship of housing, health and employment in serving social needs. Whilst he advocated national policies to safeguard public interests in each, he acknowledged that the ongoing adoption of mechanised production in agriculture and industry would lessen demands for labour, skilled and unskilled, within developed economies. More social democrat than conservative, he thus called for government to contemplate the need for new ways of financially sustaining and meaningfully occupying the growing proportion of the population for which work, and wages, would simply no longer be available.

Building on President Woodrow Wilson's efforts in the aftermath of World War I, the Roosevelt/Cordell policy of promoting developing countries as bona fide trading partners served only to intensify the problems Chamberlain had identified so early. Add population growth within developed countries (the U.K. and U.S. populations have respectively doubled and tripled since 1930) and we see the complex scenario against which our modern socioeconomic and political systems struggle, only to be found wanting. Too many people, too little work, more wealth than ever before, but hopelessly uneven in its spread across countries, rich and poor, and within societies, developed and developing.

Divisions

It is this division of wealth and opportunity that generates the angst that underpins the unrest and fuels the political turmoil now so prevalent. In short, in the minds of so many, politics, as hitherto known, is simply not working. Its failures are seen in the high levels of unemployment amongst those whose jobs have "migrated," leaving families in despair, resigned either to accepting robots at home or cheap unregulated labour abroad. As Harvard philosopher Michael Sandel wrote in "The Tyranny of Merit," it's not just the right to work and earn that has been "stolen," it's the right to contribute with dignity that has been eroded, especially amongst those who have traditionally offered their services in the form of skilled and unskilled labour.

The consequences of all this now find expression in new forms of planning and architecture. Witness the rapid installations of security fences and gates to our suburban gardens; the new elite "private" housing estates with controlled entry and patrolled grounds; and, ultimately, the emerging gated townships (really no more than forts) with their own shops, schools and leisure facilities, one of which, located in the United States, is described thus:

> *this area is considered one of the most secure neighborhoods … and is behind a second gate only accessible to residents.*

> *Security is tight, and the surveillance system features facial recognition technology and license plate readers that can detect suspicious activity or unfamiliar cars entering the property.*

Outside and beyond, along the sidewalks of the once great cities of San Francisco and Detroit, and in the no-go areas of Dallas and New York, the "undeserving" poor live and sleep, in ever growing numbers, in their tents and makeshift shelters, seemingly evermore helpless and evermore hopeless.

Ultimately, only democratic political processes, in wholly recalibrated forms, can offer answers to all this, but that is proving difficult as we drift into this post-truth age where basic trust in politics and politicians is at such a low ebb.

And that is precisely why the rigorous process of consequential questioning is so important. As Tara Setmayer, former Republican Party communications director has asked, "Is [this] the kind of country we want?"

The bottom line is this: In a democracy, we can only ultimately succeed through an educated, properly and morally informed electorate making the right decisions. That is why TRUTH matters so much – it is essential to informing the answers to our consequential questioning.

The Architect's Duties

As architects, our duty is to visualise alternative futures and offer them for informed interrogation. Do we really want the antithesis of Jane Jacobs' sophisticated vision for city life? When all the barricades are finally in place protecting walled and policed havens from the anarchy and violence without, will the protected be able to tolerate the suffering that surrounds them? Will consequential questioning reveal the true character of the built reality that would prevail? Or can we forestall this process and find an alternate, fairer way forward in terms of tomorrow's planning?

And here's the biggest challenge of all: the need to build sustainably, in particular, to service our buildings in ecologically responsible ways; the need to pursue net-zero carbon design solutions at this nanosecond to midnight for avoiding ecological disaster.

Evangelism's Impact

This is where I turn the focus to the American evangelicals, for in no other developed country does any religious group have so much influence on the outcomes of elections. Some sources suggest as many as 80% of evangelicals support the Republican cause, a situation decades in the making (https://www.oah.org/tah/november-5/evangelicalism-and-politics/). Others suggest the influence is markedly less, but there is universal agreement that it substantially favours the GOP, and this is why it is both fair and necessary to challenge the evangelical position in the context of the eco-agenda and architecture's duty to deliver that net-zero building programme.

The AIA has facilitated major advances in this area, and prominent architects (Ed Mazria and his various initiatives, such as the China Accord and the 2030 Districts Movement, and William McDonough, author of "Cradle to Cradle," to name just two) have offered brilliant

> ## Is [this] the kind of country we want?

thought leadership at the international scale, but any such progress is quickly upended by blind belief in such frightening policies as "Drill, baby, drill."

The irony of the evangelicals' support in this respect is extraordinary. This is the pro-life party simply failing to press home the consequential questioning so evidently required. All scientific evidence points to disaster if carbon emissions are not severely and rapidly reduced. Architecture cannot function at the simplest level of providing shelter if the host environment is too hostile for survival.

Consequential questioning has never had such a critical role in our safe survival.

What kind of world do we want?

Profound Hope

To end on a note of profound hope, let us consider corporate giant Toyota's latest initiative. Vice President and Chief Technology Officer Hiroki Nakajima has just announced their prototype water engine, which will run on pure water. It achieves this by using a process of advanced electrolysis to convert water into its constituent parts of hydrogen and oxygen to make chemical energy that produces power to drive the engine with only water vapour emissions.

(Learn about it here: https://youtu.be/FlxT6rK02lk?si=fxS5pQPlqleTmCHd.)

No vested corporate, institutional or theological interests should be allowed to obstruct such progress, and every pressure should be mounted upon political parties to facilitate the rapid development of such initiatives. Consequential questioning dictates there is no other way – not even for the evangelicals.

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

THE MARK OF TRUE TRANSFORMATION

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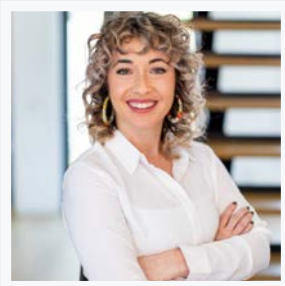
THE MARK OF TRUE TRANSFORMATION

Dez Joslin

CEO, Enarche Design

Key questions to help you leverage a unified brand that reaches strategic goals.

Setting a Clear Path Forward

Most of us would consider ourselves visionary leaders with ambitious goals to grow our firms, positively impact the communities we serve and leave a mark on this industry. That's why we're part of the DI community – contemplating, discussing and planning for the ever-evolving future of the built environment.

So, why is it such an impossible feat to get your team on the same page about the impact you're trying to make – let alone the market – to understand why it matters?

We've all experienced the "It's lonely at the top" sentiment at some point in our careers. You, or a select few, may feel like the only ones who can clearly see where your firm is heading and what's needed to get there. Creating a defined, documented and shared vision and strategic plan is the first step in garnering buy-in, but …

Does a plan alone do enough to motivate everyone to play an active part in transformation?

An equally important yet overlooked tool firms should leverage is brand strategy – that is, curating and living out a brand that intentionally aligns with your strategic goals. Despite research showing it can

increase revenue by up to 20%,[1] it is often seen as a *nicety* rather than a *necessity*. Many firms' marketing and business-development initiatives are based on short-term responses to immediate opportunities and industry trends rather than letting the brand lead how they show up in the market. Unfortunately, this approach only creates reactive, inconsistent outputs – making it difficult for people to understand who you are and what you stand for.

The good news is we can course-correct if we shift our perspective on the impact of branding.
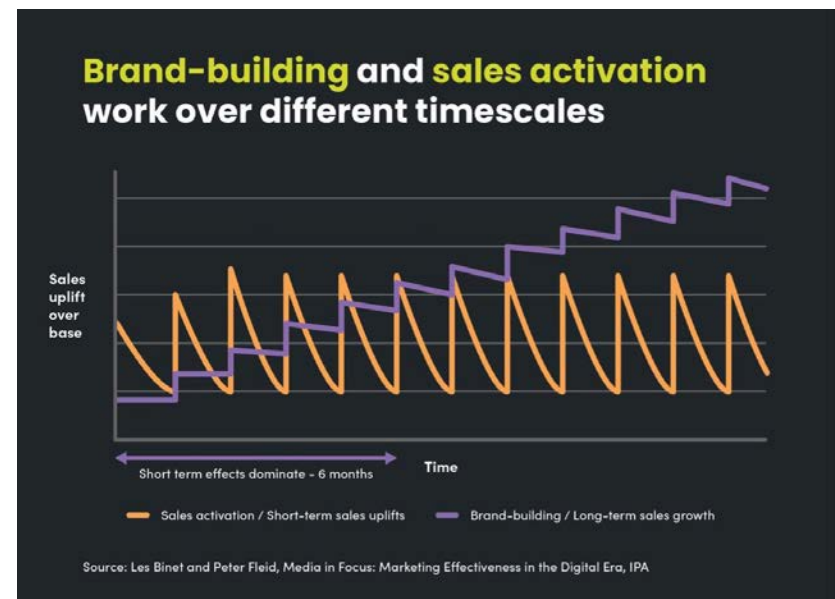
Understanding Brand

Brand is much more than the logo, color palette or fonts you use on a proposal or website. It is the identity, personality and story of your company that makes it different from competitors that sell similar products or services. In other words, it's the *perception* of who you are, what you stand for, and the unique value you provide internally (to your talent) and externally (to your clients). A well-articulated brand is the rallying cry that makes people want to work with and for you, as well as the guide that helps you determine if those people are a good fit. Here are five reasons you should take a more proactive approach to your brand identity going into the next year:

1. According to a 2023 Netline Report, B2B marketing content consumption has increased by 54% since 2019.[2] With competitors offering equally compelling portfolios and similar fees, consistently showcasing your unique value is the only way to capture loyal audiences and win new clients.

2. More than 70% of Gen Z say a company having a "mission and values that align with their own" is at least "very important."[3] Emerging top talent seek firms with identity – and will opt for a company that looks, feels and acts like them.

3. 42% of companies told Forbes that a lack of buy-in contributed to their change failure.[4] Your team needs a unifier to boost morale and collaboration through company shifts.

4. If your firm's future involves mergers or acquisitions, a brand valuation is a critical part of the process. A solid brand identity will boost your value and market appeal, giving you a huge leg up at the negotiation table.

5. 100% of the firms for which my team has completed a brand perception study have shown a significant discrepancy in how they view themselves versus how their clients, employees and collaborators perceive them. If your perception isn't built *by* you, it will be built *for* you.

So, if branding is this important, why isn't everyone focused on it?

The built environment industry has traditionally avoided many effective marketing practices (including branding) due to historical stigmas. As an additional challenge, brand development is a long-term investment that's harder to measure. While business development and responsive marketing tactics may yield short-term gains, they do not contribute to expanding your market reach.[5] This is visualized below in the notable study "The Long and Short of It" by Binet and Field. Branding is what primes the market for overall growth – especially in sectors with longer sales cycles like the design and construction industry – because it steadily reaches a broader audience and creates top-of-mind awareness. This can be particularly important when entering new markets or expanding your reach through mergers and acquisitions. The bottom line is that having a solid brand strategy can help you more effectively achieve your long-term strategic goals.

Brand-building and sales activation work over different timescales

Sales uplift over base

Short term effects dominate - 6 months   Time

— Sales activation / Short-term sales uplifts   — Brand-building / Long-term sales growth

Source: Les Binet and Peter Fleid, Media in Focus: Marketing Effectiveness in the Digital Era, IPA

Reflecting on Brand Perception

To advance in a meaningful way, you must take a step back and reflect on the current state of your brand. Here are a few questions to start the conversation:

- Does your current brand embody your values and vision?

- Does your current brand resonate with your current and ideal market(s)?

- Is your brand showing up consistently (visually and verbally) across all internal and external channels?

- Do you know what your brand represents in the minds of your staff and clients?

- Can you and your staff clearly and concisely articulate what makes your firm different from others in your space?

- Who would answer the above questions differently than you? Why?

The answer to the last question is crucial because perception is not always reality. Sometimes, we need an external perspective to help us navigate our own biases and identify our current state. My marketing firm, Enarche, has helped many leaders work through these questions to create a clear path forward with a Marketing & Business Development Audit. Not every firm needs to reinvent who they are, but many should at least refocus. Wherever you land on the spectrum, give yourself (and your team) permission to push the boundaries of what's been done in the past.

And when you're ready to take the next step, we're here to help.

> ❝
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> If your perception isn't built by you, it will be built for you.
>
> ❞

Dez Joslin is the founder and CEO of Enarche, a firm focused on bringing holistic marketing and business development expertise to the built environment industry. With a background in and out of the AE space, she is passionate about developing unconventional solutions that help her clients think beyond the what to infuse the why, cast vision, scale their organizations and build stronger, strategic brand identities. As CEO of Enarche, Dez leads a team of strategists, operationalists and creatives who rally behind one goal — connecting you with your ideal client.

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CONSEQUENTIAL QUESTION
HAS MODERNISM FAILED US?

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What do the past 100 years tell us about the next 100? John Jennifer Marx considers second-century modernism.

CONSEQUENTIAL QUESTION

HAS MODERNISM FAILED US?

John Jennifer Marx, AIA

Founding Partner/Chief Creative Officer, Form4 Architecture

Modernism, viewed as a style in addition to a movement, has a fascinating and tumultuous history. Early modernism's design ethos had an imaginative and intuitive quality that evoked rich, deep human responses. Initially this movement was an act of rebellion–stylistic, cultural, social, economic and political–against the burdens of western history at the turn of the 19th century.

Modernism challenged humanity to change in fundamentally positive and thoughtful ways. Its ramp-up period was spectacular in its holistic nature: Everything from spoons to cities accelerated toward an emerging modern zeitgeist.

As a culture of architects and business patrons, we believed passionately in that future, starting in the 1930s with art deco and art moderne. By the 1950s, popular culture fueled a drive toward rockets and stardust, based on the conviction that "mankind" could conquer disease and poverty and have dominion over nature, all through the delights of technology, rational thought and science. Modernism represented a future vision of humanity's potential to soar to great heights, freed from the shackles of past conventions, atrocities and social orders. Can we rediscover our fervor?

One hundred years later, modernism can be seen to have created its own set of conventions and ground rules–and limitations. The law of unintended consequences caught up to us. Modernism is in need of renewal–or reappraisal, at the least.

Modernism: A Retrospective

Today, modern architecture is at a crossroads. While celebrating the progress it has nurtured, the modernist design ethos must admit to its past transgressions and current public alienation. In learning from modernism's bracketed history (negative and positive), architecture could move forward thoughtfully—and perhaps radically—to fulfill its aspirational potential to be of service to, and inspire, humanity.

In modernism's developmental years, a philosophy of rational pragmatism ultimately diverged from a sense of artistry. This led to an unhealthy imbalance, an arrogance that thinking alone was the highest order of human achievement. This prioritized thought process over creative process and produced a series of unfortunate outcomes, the most alarming of which centered on architecture's growing lack of cultural relevance to the public.

Culturally, many factors influenced this shift. In 1966, concurrent with the glorious stylistic crescendo of mid-century modernism, Robert Venturi, in "Complexity and Contradiction in Architecture," asked us to not design from the heart. Also in 1966, the Temptations' song "Beauty is Only Skin Deep" exemplified a social movement that began to hold that anything beautiful was de facto superficial. Many architects intentionally began to remove beauty and grace from their palettes in attempts to be taken seriously.

Architecture then drifted through the 1970s, '80s and '90s, moving toward problem-solving, conceptual clarity, intellectual rigidity and machine architecture. These are all valid theoretical stances in balance but lose momentum when they also introduce migration from joy and warmth and move us away from expressing the human heart.

Architecture in the late modern decades lost sight of one of our most important attributes—the passion to engage, to serve, to inspire. Culture often changes in cycles, wherein things of great value (e.g., modernism) can become exaggerated to the point of absurdity. The eternal challenge is to recognize and rebalance these shifts when they occur. When we get complacent, or bored, we succumb to entropy, to taking the easier or safer road. We might even dismiss the need for constant renewal and regeneration—an ill-informed coping mechanism for survival.

> " If we can collectively recognize the need for change, several aspects of modernism, as we currently practice them, may deserve reconsideration in charting a new future. "

Caught in conflict between art and business, the profession of architecture seemed to fall victim to pragmatic materialism disguised as philosophical and theoretical integrity. A blandness emerged in the form of non-poetic minimalism. The reactions to this have been visible from inside and outside the profession.

Frank Gehry infamously stated what many in the profession were too shy to utter at a press conference after an exhausting flight to Spain. "Let me tell you one thing," he emphasized. "In the world we live in, 98% of what gets built and designed today is pure shit. There's no sense of design nor respect for humanity or anything. They're bad buildings and that's it." This remark was prefaced by the raising of his middle finger.

To substantiate the claim of public disdain for modernist work, a 2020 Harris Poll[1] of everyday Americans compared modern to historic U.S. federal buildings. More than 72% of Americans chose historicist architecture over modernism. This result was uniform in terms of race, class, education, gender and socioeconomic status.

To counter this, it would be easy to resort to historicism and sentimental nostalgia to bridge an ever-deepening disconnect between the public and modern architecture. Just last year, the Beautifying Federal Civic Architecture Act—stating, "Classical architecture is the preferred and default architecture for Federal public buildings"—was introduced in the U.S. House of Representatives. (There has been no further action.) The elements of humane design reside in these styles, but do not represent the path to our collective future.

Modernism Reinterpreted

To adapt to our current reality and prepare to face a larger problem set, we need to create more humane and culturally relevant forms of modernism. We need to open it up to embrace the full range of humanity and be inclusive across a wide spectrum of cultures, genders and regions.

If we can collectively recognize the need for change, several aspects of modernism, as we currently practice them, may deserve reconsideration in charting a new future.

Despite our attempts to predict and design the future, we often find that our solutions quickly become the past. But this paradox can be a designer's sweet spot, a dynamic we can leverage for greater impact. Freed from the shackles of historical constraint, modernism offers a powerful range of expressions that gives designers an open canvas to

Second-century modernism: In search of balance
Image courtesy John Jennifer Marx

create renewed emotional engagement. But when we look at issues such as universality (e.g., inclusive access by many, ageless appeal, et al.), we will need to balance this with the notion that design is most memorable and relevant when it has a unique human expression. To regain this condition, we must look back to modernism's early gestational moments, back to when we believed in the promise of "the future." Rather than a future solely based on rationalism and technology, we need now to reintroduce the human spirit.

By its nature, architecture exerts its presence for decades, if not centuries. It is not easily thrown away. It has forever been a fundamental tenet of the profession to take a long view of that responsibility. That said, modernist architecture has ironically developed an overt obsession with "timelessness." Timelessness, a paradox, has become a constricting cultural force, imposing sets of normative behaviors. In a modernist context, timelessness has come in practice to mean "without style or character." Poetic minimalism resides outside this characterization because the "poetic" is what elevates a specific example of minimalism to the level of timelessness. Absent poetry, minimalism is banality, arguably what is at the core of the public's dissatisfaction with most modern work.

On the other hand, timelessness, if seen as a measure of rigor, discipline and high standards, can be powerful within the context of a specific style of architecture, whether as a refinement or extension of an existing style or the creation of a new one. To say something is "timeless" is a high aspiration. It means it will always have an enduring resonance. The most timeless buildings are those we will not throw away because we love them too much.

Modernism is capable of producing lovable and inspiring buildings. It takes only intention. Lovable might be best approached as a broad set of intentions rather than as an issue of style. One might start with a set of intentions to create "lovable design" and examine that question deeply. From a perspective of emotional meaning and resonance, one can then search for formal expressions of those intentions that fit the context, client, building use and artistic interests of the project designer and team. Rather than assigning a specific "style" as lovable, it might be better to encourage the widest possible range for self-expression. To have thousands—if not millions—of designers each creating different imaginative responses to "lovable design" would substantially change the character of the built environment. The public just might fall in love with architecture again.

A New Outlook: Emotional Abundance in Second-Century Modernism

Can we update this ideological framework and establish a new outlook that is open-ended and operational? If the first century of modernism can be considered an architecture of abstraction and ideas, what might we design if we turn our attention, in this second century of modernism, to an architecture of emotional abundance? Second-century modernism can create an architecture of richness and community by placing a higher priority on emotional meaning.

This shift in the design process will balance the rational with the intuitive and engender a "less + more" approach to expanding the range of cultural values. Such an inviting, inclusive approach welcomes you to embrace the paradoxical qualities of human existence and design from the heart *and* the mind.

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[1] The poll of more than 2,000 respondents was commissioned by the National Civic Art Society, a Washington, D.C.-based nonprofit organization that works to advance the classical tradition in architecture and urbanism.

> " What might we design if we turn our attention, in this second century of modernism, to an architecture of emotional abundance? "

John Jennifer Marx, AIA, is chief artistic officer of San Francisco-based Form4 Architecture, responsible for developing the firm's design vision and language. He advocates philosophy, art and poetry in the thoughtful making of place through the compelling power of form, aware that architecture is a balancing act between self-expression and collaboration. Marx is the author of several books and treatises. His newest book, "Second-Century Modernism," will be published in 2025. Marx earned his Bachelor of Science degree in architecture studies from the University of Illinois at Urbana-Champaign.

MEASURING GOVERNANCE

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MEASURING GOVERNANCE

Bob Hughes

Design Futures Council Senior Fellow

What is the proper role for government in society and the economy? Bob Hughes steps outside his comfort zone to pose larger, more provocative, consequential and harder-to-quantify questions.

Throughout history, humans have gravitated toward community for safety, companionship and efficiency. As communities grew, the need for organization developed, along with the need (and desire) for a power structure. Power structures may be informal, reflecting the strengths and leadership characteristics of their members, or formal, with written rules such as those found in governments. As formal governments evolved, so did the question of their specific purpose and function. In the context of a polarized political climate and a national presidential election, the questions are more pertinent than ever: What is the proper role of a formal government in a civilized society, and how might we measure its effectiveness?

In the United States, the natural starting point for a discussion of government's role in society is the Constitution. While most of its content is dedicated to the establishment and function of the government, its preamble provides a glimpse into the Founding Fathers' intent, its purpose and goals:

> We the People of the United States, in Order to form a more perfect Union, establish Justice, ensure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

As with much of the Constitution, these carefully chosen words provide a framework and structure yet are vague enough to require interpretation and encourage thoughtful debate. The goals seem obvious enough: establish justice, ensure domestic tranquility, provide for the common defense, promote the general welfare and secure the blessing of liberty. The debate comes into play when we must decide how to achieve those broad goals.

A Dearth of Discussion

Unfortunately, the current-day political process leaves much to be desired in its ability to engage political leaders and the public in meaningful, useful discussion on how to achieve the broad goals enumerated by the Founding Fathers. The emergence of career politicians and massive quantities of money from lobbyists, political action committees and corporations are key reasons for the dysfunction, in my view, but that's a topic for another time. Perhaps business leaders with their collective experiences running successful companies can fill the void. As business leaders know, well-run businesses usually have mission statements that outline broad goals for their firms, much like the Constitution's preamble. But there's a difference. Well-run businesses also have specific metrics by which success or failure may be measured. In truth, most businesses have many metrics:

- Financial statements (the foundation of the business sector) that track revenues, expenses, profits, assets, liabilities and net equity.

- Sales metrics.

- And human resources metrics, to name a few.

Such measurements are used across the globe to track and manage business activities in support of broad goals. While some are subject to interpretation, in general, their use helps achieve corporate goals and lessen the task of corporate governance.

Key Performance Indicators

Beyond these standard financial statements, the best-run businesses often have other important metrics to track trends and suggest adjustments. These are called key performance indicators or KPIs.

> " What is the proper role of a formal government in a civilized society, and how might we measure its effectiveness? "

If you agree that government is necessary to achieve the broad goals established in the preamble, the consequential questions become:

- What should the government KPIs be?

- What tools (powers) should be permitted to achieve them?

The broad philosophical question of government's proper role in society will thus be answered by the range and precision of the KPIs and by the acceptable powers used by the government to achieve them. What results can be seen as a cyclical discussion, but one we must face. With the presidential election cycle entering its final stage, now is an appropriate time to have this discussion.

Prerequisite Conditions

Assuming we are in search of key government indicators, two important conditions are required. The first is having open minds and the desire to engage in thoughtful debate. The willingness to listen, understand and accept other perspectives, and a disposition to compromise are the foundation of this condition. Sadly, our current political climate does not seem capable of supporting any of those critical conditions. Too much of the current campaign season is devoted to aggression, anger, hostility, mocking, lying, cheating and belittling. The proper role of government and appropriate KPIs will never be established without respectful, rational, thoughtful debate.

The second condition is understanding the nature and implications of different types of KPIs. A too broad KPI, being unquantifiable, will likely be unachievable. A too narrow or unrealistic KPI may be meaningless. For the government KPIs, the size and diversity of the population is an important consideration. To choose a KPI that is a single aggregate can be ineffective, while getting too granular may become unmanageable and of little use.

Examining Broad Goals – and Questions

Reconsider the broad goals in the Constitution's preamble: justice, domestic tranquility, defense, general welfare and liberty. What would a proper KPI be for establishing justice? How about crime rates? Do we use national crime rates? Local crime rates? By age? Ethnicity? Birth status? Incarceration rates? Is justice more than just crime or incarceration? Should social justice be considered? How about business justice (e.g., enforceable contracts, copyright and patent

protections)? What about domestic tranquility? We've had only one civil war (so far). That's pretty good by any measure. Or is domestic tranquility better measured by surveys of individuals' happiness? National defense is relatively easy to track. There have been no successful invasions to date, but the U.S. spends a tremendous amount for defense. Is the spending level justified? How about the general welfare? That's a big issue and it's getting bigger, becoming more relevant by the day, especially during the presidential campaign. Is gross domestic product good enough? As long as the economy expands, is the government achieving success? Who is measuring the effect of such expansion on climate, the planet and global warming? What about employment? Or inflation? Should income or wealth distribution be KPIs? Should education be provided to all? How much? What about health care? Clean air and water? Public goods and services, from roads, rail and airports to national parks? Is industrial policy, from trade policy including anti-dumping and tariffs, to support for critical industries like technology, energy and agriculture essential?

Finally, we have liberty. Is free speech an absolute? Has spreading lies, particularly for self-enrichment, become acceptable? What are our protections against defamation and libel? What about owning guns? Why not automatic weapons or weapons of mass destruction? Or drug use? These are all very real, relevant questions. Many are expressly stated as liberties guaranteed by the Constitution. Yet few, if any, specific KPIs (goals) exist to measure them. In today's political climate, agreeing on answers to these questions seems like an impossibility, but it doesn't have to be.

The Dual Mandate

While the federal government does not have widespread, established KPIs, the American people could benefit greatly from having thoughtful, reasonable, consensus ones. But at least one federal agency does: the Federal Reserve. The Fed has what's commonly called a dual mandate: maximum employment and stable prices (with moderate interest rates sometimes added). Furthermore, the Fed, in concert with academics and Fed staff economists, have (mostly) agreed upon specific numerical targets:

- Price stability is inflation around 2% or less over time.

- Maximum employment (aka full employment) is around 3.5% to 4.0% unemployment.

Having these specific, stated goals means everyone knows what the Fed is trying to achieve. There will always be critics, but specific, stated goals mean that Fed policymakers can be held accountable. They can explain why decisions were made and how those decisions were consistent with the goals. The same accountability would be helpful if applied to the executive and legislative branches.

Business Leaders (and National Leadership)

With government dysfunction seemingly at an all-time high and society becoming more polarized, we business leaders may be the best hope for achieving our Founding Fathers' broad goals as laid out in the preamble of the Constitution. Successful business leaders are skilled in establishing and achieving goals via KPIs. By leading a national discussion of practical and thoughtful perspectives about the role of government and appropriate metrics, they may be able to help bridge the widening gap between the political parties and their supporting societal segments. More importantly, by reviewing their own KPIs to ensure they focus on more than just profit, their businesses can consider the "general welfare" of their employees and the communities they touch.

In so doing, business leaders across the nation can lead by example and help America achieve the goals the Founding Fathers envisioned, at a time when government's role and effectiveness is in doubt.

Let's get to it.

Bob Hughes is a senior fellow of the Design Futures Council and writes regularly on economic matters.

MAKING DESIGN RELEVANT

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MAKING DESIGN RELEVANT

Adrian Parr Zaretsky

Dean, College of Design
at the University of Oregon
Senior Fellow, Design Futures Council

Adrian Parr Zaretsky considers four global issues and trans-environmental thinking.

DesignIntelligence / Michael LeFevre (DI): We're talking with Adrian Parr Zaretsky, dean of the College of Design at the University of Oregon. Our fourth quarter theme is consequential questions and the decisions they frame. As the dean of a leading, multidisciplinary school of design, what questions are top of mind for you? To leap right in, what ARE the consequential questions, in your mind, from your lens as a design school dean, perhaps influenced by your other, prior hats, roles, perspectives and collective experience?

Adrian Parr Zaretsky (APZ): For me, the most consequential question is: What makes design relevant? This question serves as a pivot point for me as a design educator, researcher and advocate because it encourages us to consider a whole gamut of timely issues. These are concerns we share in common with other designers, such as how design works in a time of artificial intelligence, as well as topics pertaining to the reflexive modality of design – namely, the way design practices and thinking are necessarily shaped by current events and circumstances, such as climate change, and, in turn, how design thinking and practices shape the world in which we coexist. Ultimately the question of design's relevancy is a machinic one of how design relevancy works. The short answer to that is by being both reactive and proactive, realistic and aspirational.

DI: Do you agree with our premise that the questions facing designers these days are more consequential than they may have been in the past?

APZ: Absolutely! Because there is so much at stake in a world with a rapidly changing climate, increasing poverty, deepening conflicts and technological innovation. The question of design's relevancy prompts consideration of four massive issues and a host of attendant questions:

1. ENVIRONMENTAL DEVASTATION

The building and construction sector continues to be one of the major drivers of climate change, with the building sector being responsible for 37% of greenhouse gas emissions.[1] Climate change will reshape life on Earth and design can either be part of the problem or enable us to better adapt and become more resilient as we collectively face sea level rise, more frequent and intense storm activity, heat waves, biodiversity decline and species extinction.

A changing climate impacts the health and vitality of the world's oceans, wetlands, forests and land cover. At the same time, anthropogenic land use patterns are changing the climate, compromising water quality, precluding groundwater recharge and driving species extinction. As the world's carbon sinks are removed to make way for human settlements and agriculture, other-than-human species habitats are being removed at an alarming rate. Currently, we are facing a crisis in biodiversity, as other-than-human species are going extinct at 1,000 to 10,000 times the baseline rate.[2] This is an unsustainable scenario if left unchecked. I see design as having a lot to offer in responding to this situation. How might we design our built environments to better capture and filter rainwater? How might we integrate other-than-human species habitats more extensively into the built environment? These questions can serve as launch pads for design research and investigation. They are also questions that formed the basis of two exhibitions (one titled "Watershed Urbanism," the other "Transpecies Design") I curated for the European Cultural Center's Venice Biennale exhibits in 2020 and 2022. The exhibits featured the incredible talent of faculty and students at the University of Texas at Arlington and the University of Oregon, along with practitioners such as Michael Van Valkenburgh, HKS and Perkins&Will, to name a few.

2. ARMED CONFLICT

There are approximately 110 armed conflicts currently underway globally.[3] The most recent statistics I have on these date to 2022. At that time, the United Nations reported that approximately 50 million people in the world were affected by armed conflict.[4] Since that study was published many of the conflicts it referred to persist, such as those in Syria, Yemen and Afghanistan, and new conflicts have arisen. In 2022, war broke out in the Democratic Republic of Congo. Also that year, Russia invaded Ukraine, thus far resulting in the death of 180,000 Russian troops and 31,000 Ukrainian soldiers.[5] The following year, war broke out in Sudan and has now resulted in 15,000 dead.[6] Later that year, the Israel-Hamas/Hezbollah/Houthi war began, which has resulted in approximately 40,000 dead militants and civilians in Gaza, over 1,300 tortured and murdered Israeli civilians and over 700 IDF soldiers killed.[7] To sum it up: the Geneva Academy of International Humanitarian Law and Human Rights reports there are currently 35 armed conflicts on the African continent; 45 in the Middle East and North Africa; 21 in Asia; seven in Europe and six in Latin America.[8]

What does this mean for the built environment? In the case of Ukraine, as of April 2023, approximately 158,000 residential buildings, 3,200 educational structures and 806 health care facilities were damaged or destroyed.[9] The reconstruction of former war zones and the design and development of refugee settlements for those displaced by war are both areas of design practice and thinking that unfortunately need greater attention. I have written more extensively about the challenge war zones present the design community in "Birth of a New Earth," where I likened this situation to a form of urban clearcutting.[10]

Armed conflict is decimating not only entire neighborhoods and urban areas, but it is also being wielded as a weapon of war. For example, Hamas has built approximately 350 to 450 miles of tunnels reaching up to 100 feet below the ground with some 5,700 individual entry points. Access to the tunnels is restricted to the militants who built them and the hostages they capture, whilst the civilian population is deserted above ground without bomb shelters or air raid sirens to help protect them during airstrikes.[11] When you add to this lethal mix militants deliberately using civilian structures (schools, hospitals, mosques) for military operations, including firing rockets in heavily populated civilian areas, the built environment becomes complicit in a cruel and inhumane war strategy of tactical civilian sacrifice.

3. INEQUITY

The increasing inequity between and within countries is a challenge that needs more thoughtful collaboration between designers, planners, policymakers and NGOs. In 2021, the World Economic Forum reported approximately 2% of the world's population, or 150 million people, as homeless.[12] In 2023, the National Alliance to End Homelessness reported there were 653,104 people who were unhoused in the United States, nearly 40% of whom were unsheltered.[13] In addition to the growing number of unhoused, those living in inadequate housing, such as in informal settlements, is growing. Currently there are approximately 1.1 billion people living in slums, and we are on course to reach 3 billion slum-dwellers by 2050 in the absence of significant investment in affordable and social housing options.[14]

Once again, design can be part of the solution here, not the problem. Rather than designing spaces and experiences that are hostile to the unhoused, such as anti-homeless spikes and rails on park benches, designers could be exploring how to better convert many of the unused commercial structures post-COVID into residential units. There is some amazing work being done on temporary or emergency shelters for the unhoused, such as flat pack sleeping pods or tiny home co-ops like Emerald Village in Eugene, Oregon. Working with policymakers and planners, designers can advocate to change authorized density levels and demonstrate the importance of permitting more accessory dwelling units.

4. ARTIFICIAL INTELLIGENCE

The introduction of artificial intelligence into the spheres of design thinking, problem-solving, making and manufacture of designed products, experiences and services is transforming design processes and solutions. Some immediate implications include reducing the time and cost of the design process. There is tremendous potential with sensor technology and machine learning to influence and shape design solutions using real-time data inputs. More and more design solutions are incorporating technologies that are amenable to continual iteration and modification through user interaction.

That said, the age of artificial intelligence presents numerous questions and challenges to the design fields. Do the predictive capabilities of AI match that of human specialists? The gap between the two is where liability rests. It will become increasingly more important for designers to be trained in managing that risk. How might designers improve

> " There is much at stake. Trans-environmental design extends beyond a single generational perspective, aspiring to support the health and well-being of a variety of species and is multi-scalar in approach. "

or modify the rules the machine follows when solving a problem? How reliable are the data sets a machine uses? Some data sets are inherently flawed, reflecting the biases and stereotypes of the historical time in which they were collected. For example, inadequate data on women and people of color may not only be biased, but also often discriminatory. How do designers independently develop or augment the data sets machines use? What are the trade-offs of AI generated designs? Namely, empathic imagination and ethical responsibility, both of which drive the choices a designer makes throughout every phase of the design process. These are specifically human qualities that shape design solutions.

Ultimately, a successful design is not only one that is responsive to user needs, preferences and behaviors, it is affective, meaning its very existence presents a responsibility to not only the immediate user but also to the context in which it exists.

OPPORTUNITIES FOR RELEVANCE

There is much at stake. By extension, this level of criticality presents opportunities for design education, research and practices to meaningfully contribute to transforming how we live together in ways that facilitate the mutual flourishing of present generations, of humans and our other-than-human neighbors, as well as future generations. Or, what I have described before as trans-environmental thinking and practices.[15] Trans-environmental design extends beyond a single generational perspective, aspiring to support the health and well-being of a variety of species and is multi-scalar in approach.

DI: You have given us much to contemplate. We thank you for this insight.

APZ: Thank you for this wonderful opportunity to reflect on the consequential questions for design relevance. It seems the opening question became an article in its own right.

DI: Well done.

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Adrian Parr Zaretsky PhD, is dean, College of Design at the University of Oregon in Eugene (UO), senior fellow, Design Futures Council. An internationally recognized philosopher, cultural thinker and creative practitioner, she is serving as a UNESCO chair on Water and Human Settlements. Prior to joining the UO, she served as the dean of the College of Architecture, Planning and Public Affairs at the University of Texas at Arlington, and as the director of the Taft Research Center at the University of Cincinnati.

Zaretsky has published eight books. "Earthlings: Imaginative Encounters with the Natural World," published by Columbia University Press, 2023, earned the Silver Nautilus Book Award in the Ecology and Environment category. UNESCO appointed her to the Global Independent Expert Group to author a white paper on the future of higher education advancing. She is regularly invited and interviewed for her views on sustainability, design education and contemporary culture. She is one of the five founding deans for the National Dean's Equity and Inclusion Initiative, which was formed in the wake of the George Floyd tragedy. The network has grown to encompass 43 deans, and Zaretsky currently serves as the executive chair.

Her creative works have won numerous awards, such as Best Experimental Film by the Brooklyn International Short Awards and Best Women Filmmaker in Short by the Austin International Art Festival for her 2023 film, "A Tale of Three Rocks." In addition to her numerous awards, Zaretsky has been invited to curate and exhibit internationally, including several European Cultural Center (ECC) Venice Biennales, both in art and architecture. Her recent exhibit at the ECC Architecture Biennale featured work by UO students and faculty and showcased a focus on sustainability, reconciliatory and sustainable design philosophies, including mass timber. In addition to being featured in international publications, the exhibition exposed more than 600,000 Biennale participants to the UO and its prestigious research.

TO SPEED OR
NOT TO SPEED?

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TO SPEED OR NOT TO SPEED?

DeeDee Birch

Sustainable Design Consultant and Writer

DeeDee Birch poses a single consequential question: What is the case for slowing down?

If there's anything capitalism and the climate have in common, it is a sense of urgency. We're all told they are both, in equal but opposing ways, subject to wither and die as time passes unless we actively participate in their management. We're told the failure of either will result in the end of life as we know it. While climate change remains the most significant and unanswered question of our time, our global economy has grown rapidly and infinitely. We are urgent in all the ways that do not matter.

One of the few phenomena to force economic activity to a halt was the COVID-19 pandemic. While lockdowns and isolation efforts carried mental, physical and emotional repercussions, they were an example of people coming before profit. More critically, the global response to COVID-19 was an example of global governments collectively, cooperatively and urgently mitigating the impacts of a fatal threat.

For decades, global cooperative efforts to solve the climate crisis have lacked the urgency that defined the pandemic response. Why hasn't the climate crisis received the same response and attention? For starters, the direct relationship between cause and effect helped mobilize meaningful widespread efforts to contain the virus. It spread, and people became sick. People died. Self-isolation resulted in fewer COVID-19 cases, and the visibility of our successes and failures to protect people fueled our response throughout the crisis. By contrast,

the climate crisis is decentralized, multifaceted, volatile, unpredictable and deeply intersectional. None of these dimensions foster swift, unified action.

Currently, we measure the climate crisis via time and scale, but these measurement units most often relate the scale of solutions to how much time we have left before life on Earth is no longer viable. Applying scale and time to the climate crisis in this way invites tired debates about individual action versus systemic change as the clock runs out. (The answer, by the way, is both. We need every ounce of change from both top down and bottom up. Positioning individual change as being in conflict with systemic changes creates a false dichotomy.)

Instead, perhaps we should think about time as a solution. Historically, human perception of time has created a major barrier to sustainability efforts. We consistently prioritize short-term consequences over long-term risks because short-term concerns such as food, shelter and potential predators have determined survival throughout evolution.[1] Our ancient brains make it difficult to comprehend and safeguard our planet's natural resources for generations to come.

Moreover, our capitalist economy moves fast. Our lives are defined by market forces, and the market operates in the present. Food prices, housing costs, inflation and unemployment rates all fluctuate daily and dictate the experience of our everyday lives. When it comes to the climate crisis, psychologist and Norwegian politician Per Espen Stoknes explains, "Psychological distancing means that the human brain tends to see climate change as something abstract, invisible, slow moving, and far away in terms of both space and time."[2]

For many of us, the climate crisis feels much like what journalist and environmental activist George Monbiot describes:

> To most people, who are not economists or politicians or journalists, the state of the living planet features as a real but remote concern, dimly perceived through the gauze of daily life. Something to worry about, certainly, once the mortgage has been paid and the kids have left for school and we have worked out what the hell to do about our pensions. Probably the best time would be never. But right now it is all too complicated, and it can't be that much of an issue anyway, if no one is stopping us from buying that bigger car we fancy, or eating the fish those people say are almost extinct, or washing our hair with stuff made from palm oil.[3]

Our evolutionary biology and broad societal dynamics built around immediacy force climate concerns into the backseat. The plasticity of our perception of time has clearly worked against sustained, engaged climate crisis action, but it does not have to. Meaningful climate action may be as much a function of temporal rhythms as it is of scale.

Questions Abound

In the face of an urgent climate crisis, is there a case to be made for slowing down?
Is doing less the most powerful form of action available to us?
And what does that mean for those of us designing and constructing the built environment?

Slow Research Lab founder Carolyn Strauss and researcher Ana Paula Pais describe the idea of slow as "a different tempo, conjuring up a sense of spaciousness and possibility, and a richer, deeper experience of life."[4] Like most sustainability concepts, slow contains a cultural component. It's an idea that depends on individual and systemic change. In a practical sense, slowing down means decelerating the rate of our economic activity: our manufacturing, consumption, building and waste streams.

Nine Boundaries

Even though we live in an economic system that preaches and practices infinite growth, humanity must acknowledge and contend with planetary boundaries. The nine boundaries, first coined by Johan Rockström in 2009 and later quantified by scientists in 2023, are atmospheric aerosol loading, biogeochemical flows (phosphorous and nitrogen), biosphere integrity (biodiversity and the productivity of ecosystems), climate change, freshwater change, land-system change, novel entities, ocean acidification and stratospheric ozone depletion.[5] These processes regulate the planet and determine the planet's carrying capacity, which refers to how much human life Earth can reasonably support.

Yet our economic system does not assign values to the planet's natural resources, nor do we have a way to account for them in our current capitalist system. As Monbiot phrases it: "Our impacts on the biosphere – the frail membrane in which life occurs, which envelops the dead rock of planet Earth – are treated as externalities. The living world exists outside the realm of market exchange, and therefore outside the models. Or it is reduced to just another component of the consumer

economy. In his work, Monbiot aptly quotes neoliberal economist Milton Friedman when he notes, "Ecological values can find their natural space in the market, like any other consumer demand.' The awkward fact that all human life would immediately end without it is someone else's problem."[6] While I'm not suggesting that we abolish capitalism as a whole, we must learn how to effectively live in and leverage this system without deteriorating the planet and the millions of lives that depend on the planet's resources.

The architecture and construction industries must navigate finite resources in a capitalist context more than many other industries. At first, slowing down may feel like an absurd idea. After all, the global population is rising, which means there will be more people to house, feed and employ. Yet frantically trying to meet the needs of a growing population in our immediate future through the use of our extractive, linear economy degrades the living conditions of people inhabiting and working in proximity to toxic manufacturing facilities and landfills. Even more critically, it compromises planetary boundaries we cannot repair. We've crossed six out of nine planetary boundaries already. In the case of biosphere integrity, the genetic biodiversity we've eliminated through environmental destruction can never be recreated. What's gone is gone forever, and it is paramount that we preserve whatever is left.

Slowing Down

So, what would slowing down afford us?
How does it solve our climate problem?
And how do we slow down while living in a system that constantly fosters feelings of urgency and scarcity mentality?

Slowing down allows for additional ways of organizing our society and planetary resources, principally for the rise of the commons. The commons is neither the state nor the market but a resource shared and managed by a community. It's an idea that has a long history in pre-industrialized human societies and is one that can be applied to cultural resources (such as language, craft and information) as well as natural resources (such as land, water, minerals and forests). More importantly, it emphasizes the aspects of our biology that are underutilized in today's capitalism: cooperation and reciprocity.

> " The word economy refers only to the "careful management of available resources" — it is not limited to our specific brand of capitalism. The commons embraces expansionism through slowing down. "

Whether taken as an abstract concept or a tangible roadmap for the revision of our resource management, the concept of the commons is centered in the idea that the resource in question cannot be sold or owned by an individual, and it is predicated on all community members having access. Compelling instances of the commons are already visible. Monbiot cites free software (Linux operating systems), Wikipedia, housing and energy cooperatives, and crowd-funded, community-run taxi services as examples.[7] In other words, multiple economies already exist outside of our capitalist system, and they present opportunities to move away from extraction and exploitation and toward greater cooperation through community. The word economy refers only to the "careful management of available resources" – it is not limited to our specific brand of capitalism. The commons embraces expansionism through slowing down.

Slowing down also allows for a more expansive definition of what constitutes a resource. Literature scholar Timothy Hampton promotes cheerfulness as a resource and sees it as "a technique, a kind of practice of selfhood that is always available. It is modest, limited, often ephemeral. But it also works on us and on our relationship with others."[8] In this sense, cheerfulness can improve our capacity to participate in the commons. Much like cheerfulness, intentionally altering the pace of our lives also fosters play, an activity that comes with more leisure time and less stress. Perhaps paradoxically, we need play to solve the climate crisis. Some of the most successful interventions are rooted in and derived from play. Consider the hedonistic sustainability movement spearheaded by Bjarke Ingels.

Inversely, slowing down allows for grief, which will be a tangible by-product of solving the climate crisis. The Global North has become accustomed to consuming more than our fair share of resources and rebalancing the scales will mean substantial changes to our daily lives. Writer Yassmin Abdel-Magied describes this feeling of grief poignantly when she reflects on her lifelong love affair with classic cars amid a transition to electric vehicles: "There will come a day where young people will have never been in a petro-fuelled vehicle. Indeed, such a day is already on its way, arriving soon, Lady Earth crying out for it. I welcome it, with open arms and tears running down my face. My fingernails will stay clean; my heart unstirred. My love is old-fashioned, deadly, life-saving, defunct. The revolution has arrived. Here's to all the cars I've loved before."[9]

Whether we employ grief, cheerfulness, play or the practice of the commons, the implications and suggestions for the built environment underlie all these ideas. Architecture influences human behavior and the ways in which we act out community. It has the capacity to create spaces for multiple truths, for people to play and grieve and support one another. The built environment has the power to revitalize cultural commons, particularly on the local scale. As artist and curator Jeanne van Heeswijk stresses, "The creative practitioner has an important role in re-imagining spaces and scenarios for living together. It is clear that we need better spaces and scenarios for living together … However, it is not simply about building them, but how we can collectively create and care for them."[10]

How can these ideas inform the places we create? How can they help groups of people find and live shared values, life-affirming activities and experiences? And in terms of how architects and designers run their practices, are there moments, hours or even days in which we can divest from the market realities of our work to engage in the commons? To grow and strengthen economies of craft, knowledge or care?

In 1966, Dutch architect Louis Le Roy created an experimental architectural project called Eco-Cathedral, in which he worked at the intersection of nature, buildings and community by creating a structure without formal plans only with reclaimed building materials over the course of decades.[11] The project had no purpose and was never developed into a finished structure. Le Roy was interested in economics, and his protégé, Julian Raxworthy, a landscape architect and professor, stressed that, "Counterintuitively, the Eco-Cathedral is all about economics, and therefore about labor and productivity. As a proud Huguenot, Louis believed in hard work and the potential of the human body to make things. As such, he was critical of mechanization and the monetization of labor that amplify capabilities, and rates of exchange that skew the value of time, both of which he felt distance people from what their bodies are capable of."[12] His project was maintained by volunteers for decades. Le Roy created a local cultural commons, strengthened the human-nature connection, and brought at least one aspect of his architectural practice distinctly outside the capitalist economy by slowing down. He fostered an economy of labor that reflected human capabilities alone and shifted the rhythms of people's lives in a way that helped them recognize the relationships we share with nature and one another.

Coda

On one last, practical and counterintuitive note, slowing down might even be a worthwhile financial investment. Many of the sustainability solutions widely discussed today, such as closed-loop manufacturing and the circular economy, present deep logistic challenges. Perhaps reducing the rate of economic activity will give those running businesses enough time to solve some of those challenges.

Instead of answering to the relentless urgency of the climate crisis and the bottom line, let this serve as an invitation to slow down, even if just briefly. To open schedules, to practice resource sharing, to invite play and cheerfulness into our professional lives – if only so that we can make a difference – and see how it feels.

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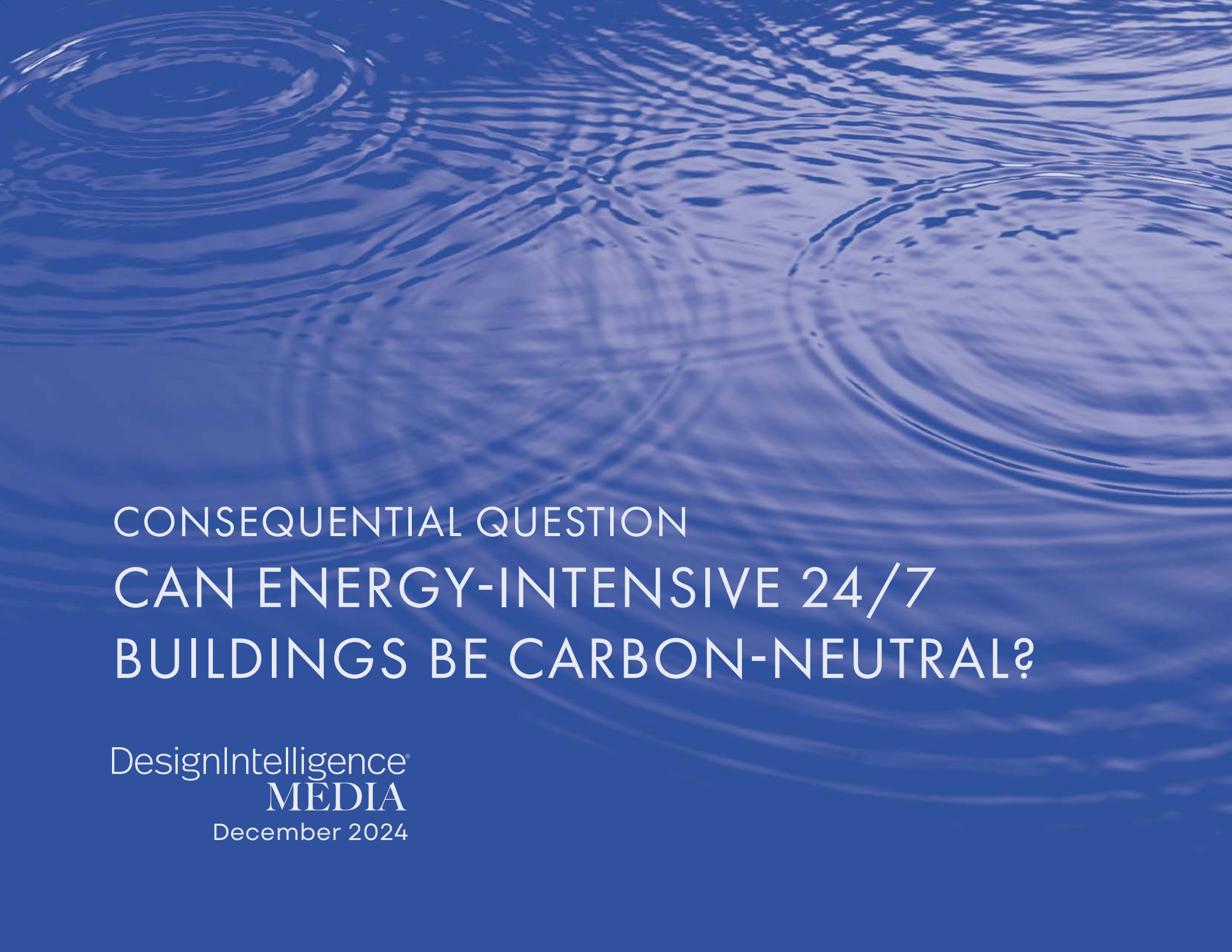
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DeeDee Birch is a regular contributor to DesignIntelligence on scientific and environmental issues.

CONSEQUENTIAL QUESTION

CAN ENERGY-INTENSIVE 24/7 BUILDINGS BE CARBON-NEUTRAL?

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CO Architects shares a case study – and answers a compelling question.

CONSEQUENTIAL QUESTION
CAN ENERGY-INTENSIVE 24/7 BUILDINGS BE CARBON-NEUTRAL?

Fabian Kremkus, AIA

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According to the U.S. Energy Information Administration (EIA), the average hospital consumes more than 100 times as much energy as a standard tract home. In effect, one hospital's energy demands can exceed a 100-home housing tract. Hospitals are always open; they run on reserve-power generators during grid outages.

The University of California, Irvine, and UCI Health, with the design-build team from Hensel Phelps and CO Architects, are proving that hospitals and energy efficiency aren't mutually exclusive. For the under-construction UCI Health – Irvine project adjacent to the university's main campus, administrators chose to exceed California's green-building standards and the University of California's own minimum-LEED-Silver edict. In advance of California's transition to 100% renewable energy, UCI administrators envisioned the country's first non-fossil-fuel hospital, one of the first in the world.

Being first places projects ahead of the curve for infrastructure and product innovation. From the outset, the UCI Health – Irvine plan exceeded the grid's existing capacity. The all-electric goal necessitated upgrading the local utilities, a multi-year process that added an extra project planning element.
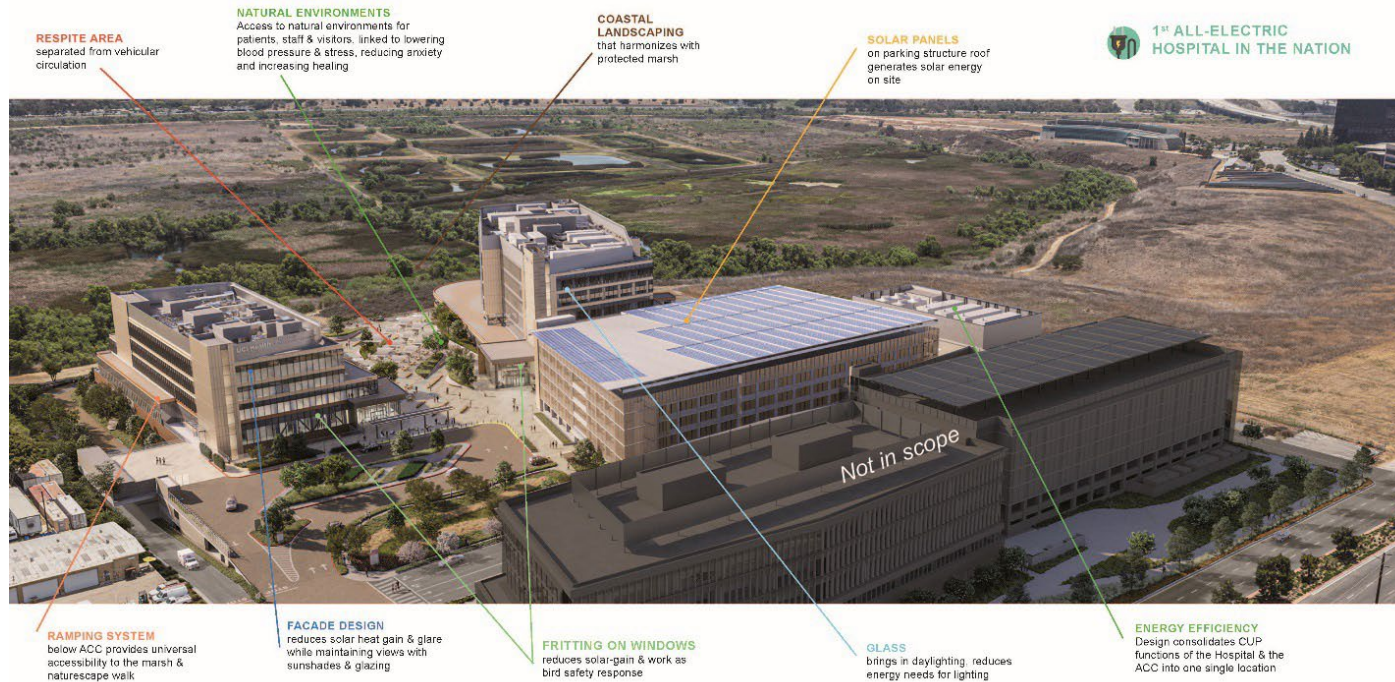
Similarly, we learned that ultra-high-efficiency HVAC products hadn't been employed in projects of this scale. We couldn't find a precedent for using heat pumps and recovery chillers in 600,000-square-foot, always-on projects.

As a result, this project presented a monumental design challenge. But since healthcare and sustainable design are two of CO Architects' specialties, UCI Health – Irvine presented an opportunity to expand our expertise, and answer a consequential question: can a hospital be designed to be carbon-neutral?

Pushing the Envelope

The project site is adjacent to a marsh—a protected nature preserve. Prioritizing natural views from the project's inpatient and outpatient buildings while controlling heat gain were design challenges from the outset. Full-height glazing was an early design goal to admit as much of the outside as possible, to foster a sense of peace and tranquility for patients, staff, and visitors.

Some twenty facade options were modeled. Our engineering partners, tk1sc/WSP, did extensive thermal-control simulations. The resulting unitized curtainwall solution became one of the project's standout features: a combination of exterior sun-shading devices and glass frit patterns that reduce heat loads and discourage bird strikes. Full-scale mock-ups constructed by façade contractor Enclos were performance-tested at Smith-Emery Laboratory before finalizing the design.

Aesthetically, the frits emulate the Fibonacci sequence, a pattern found abundantly in nature. By introducing these abstract natural patterns into our architectural expression, the design team created a harmonious connection between the built environment and the natural world.

This comprehensive exterior shading strategy extends beyond the frit patterns to vertical and horizontal fins, trellises, canopies, and umbrella sculptures, which shade the facade and exterior waiting and amenity areas.

All-Electric HVAC

Beyond providing visual and environmental comfort, this system of shading devices plays a vital role in managing the building's thermal performance. By reducing solar heat gain and minimizing solar radiation gain, a cooler indoor environment results, limiting the need for artificial cooling and promoting energy efficiency.

At UCI Health – Irvine, the paramount energy challenge in the all-electric design was implementing non-fossil-fuel heat sources. Two such components are heat-recovery chillers and heat pumps. A traditional chiller generates chilled water and expels heat. Heat-recovery chillers operate by simultaneously cooling and heating water. Rather than rejecting heat to the atmosphere, heat-recovery chillers can provide the building's heating and cooling requirements simultaneously, as long as a matching cooling load is available. Thus, UCI Health – Irvine's central utility plant operates solely on electrical energy. This not only eliminates fossil fuels—even in the hospital's kitchen—but also enhances the overall system efficiency.

Because the heating load can exceed the building's cooling load at various times during the year, air-source heat pumps and additional traditional chillers are often required. An air-source heat pump can operate in heating- or cooling-only mode (some have a heat-recovery mode). For example, if more hot water is needed for heating, the heat pump will pull the heat from the outdoor air and create additional hot water—and vice versa for cooling. Compared to conventional fuel-burning HVAC systems and those with traditional electric boilers, a heat-pump/recovery-chiller system is as much as three times more efficient, making it an ideal all-electric HVAC solution.

Heat-pump systems present three primary building-design trade-offs: space, design, and cost. First, the system needs substantial space for equipment. The heat-recovery chillers need to be indoors, and the air-source heat pumps must be mounted outdoors. The heat pumps occupy significantly more space than traditional equipment and can be noticeably loud. Acoustical provisions must be part of the design equation.

Second, the project needs to be large enough to justify a central plant for the required chilled and hot water. UCI Health – Irvine's plant is 35,000 square feet. System configuration is location-dependent—each project has its own design considerations based on its geography and weather patterns.

The unitized curtainwall combines full-height glazing for views of the marsh with Fibonacci sequence frits that progressively double in thickness. Functionally, the frits control heat gain and discourage bird strikes. (Tom Bonner/Courtesy CO Architects)

All-Electric Consideration for Architects

Program & Planning
- Open-Air Space for Air Source Heat Pumps
- Air Source Heat Pumps are Noisy & May Require Acoustic Mitigations
- Expansion of All Elements of the Electrical Infrastructure
- System Configuration is Climate Dependent / Each Facility is Different

Project Delivery
- OSP Equipment Availability is Limited
- Limited Utility 12kV Circuit Availability
- 1st Cost Increases / Maintenance & Operational Cost Decrease

Courtesy CO Architects

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> Forward-thinking design, procurement, and construction methodologies can lead to outstanding outcomes…
>
> "

The cost for the all-electric heat recovery/heat pump system is significantly higher than traditional fossil-fuel heating. At UCI Health – Irvine, recovering heat from the steam generation required to sterilize hospital instruments will bring down the operational cost tremendously. Further, gas boilers need human oversight for safety reasons. Eliminating these boilers minimizes the facilities staffing demand. Looking ahead, system pricing will ideally decrease as demand and competition increase.

To further minimize utility power requirements, the entire top deck of the UCI Health – Irvine parking garage is covered in solar arrays, which generate significant quantities of renewable power. When the additional equipment costs are amortized over the project's 100-plus-year lifespan, the initial higher first cost becomes marginal and pays back.

Embodied-Carbon Reduction

Reducing energy consumption minimizes the size of the generating systems, decreasing the embodied carbon. Early-stage strategic decisions on resource deployment with design-build leader Hensel Phelps were vital to leveraging the many synergies available to the project team. One embodied-carbon consideration was that the foundation slabs had to be thicker than initially designed. Environmental-impact insights required additional concrete to isolate UCI Health – Irvine from the adjacent San Joaquin Marsh.

To compensate, several framing designs were modeled. The solution: a buckling-restrained braces (BRB) design made from steel. This fulfilled seismic criteria and saved weight as compared to a moment-frame lateral system, reducing the structural embodied carbon impact by an estimated 15%.

The journey toward carbon neutrality for such an energy-intensive project was not without its challenges. The UCI Health – Irvine campus will be net-zero for operational carbon once the California grid converts to 100% renewable energy and phases out fossil-fuel power generation. (The emergency power is still diesel generator-operated and will never be carbon-free.)

A BRB structural design reduced embodied carbon by requiring 15% less steel. The compromise is slightly diminished interior layout flexibility due to diagonal bracing. (Tom Bonner/Courtesy CO Architects)

The Answer? Yes!

Our team's commitment to environmental stewardship guided every decision. From the beginning, we focused on eliminating fossil fuels from all facility operations. This meant rethinking traditional systems and investing in cutting-edge technology that aligned with our sustainability goals.

The UCI Health – Irvine campus project is a shining example of how forward-thinking procurement and construction methodologies can lead to outstanding outcomes. When complete, the project will be a place where modern healthcare meets nature's tranquility of, invites the outside in and connects us all to the wonderful biophilia that surrounds us—a carbon-neutral campus designed not just for today but to thrive well into the future.

Fabian Kremkus, AIA, is a design principal and healthcare team leader at Los Angeles-based CO Architects. With additional specialties in civic/cultural design and institutional interiors, he has practiced for nearly 30 years and joined CO Architects in 1999.

WHAT IS INFRASTRUCTURE FOR?

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WHAT IS INFRASTRUCTURE FOR?

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+

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Smart infrastructure can underpin societal resilience but only if cities break down their existing silos. Are we asking the right questions? Do we have the right focus?

What is infrastructure for? The UK Centre for Digital Built Britain (CDDB) has articulated a new take on this question, describing it as a series of interconnected systems that exist to support society. This is such a simple sentence, it is hard to see why we didn't see it that way before. The evolution of the infrastructure industry sheds some light on this.

In the 20th century, the focus was on providing nations and their citizens with efficient, reliable and affordable services. While this remains important, today resource constraints, environmental and health concerns, the climate emergency and social inequality have become pressing issues. In addition, society's expectations on quality factors such as time, reliability, safety and well-being have risen.

In a paper called "Flourishing Systems," the CDDB outlined how the infrastructure industry is stepping up to respond to this challenge, embedding the concept of smart infrastructure and broadening it to

promote long-term societal resilience. The following learnings from the report need to be considered by all smart city practitioners. Smart city infrastructure should be:

People-Focused

Recognising the fundamental role of infrastructure in the social, economic and environmental outcomes that determine the quality of people's lives.

With an increased focus on outcomes for people, we raise the age-old conundrum about whether we should work for the benefit of the individual or the benefit of society. This is epitomised by the trolley problem – the ethical dilemma of whether to sacrifice one person to save a larger number – and has huge implications for the application of AI in smart cities: for example, in the rules we programme into the decision making of autonomous vehicles.

As smart cities practitioners, we need to think about how our actions support the development of social capital, because outcomes that benefit the many rather than the few will achieve longer-term social resilience.

The understanding of what society values and what concessions people are willing to make is an important part of applying this concept. The smart cities agenda can support citizens' assemblies and other forms of participatory decision making. For example, the city of Auckland has used its Moata SafeSwim digital platform to create supportive citizen behaviour by demonstrating the impact of infrastructure-related municipality decisions on outdoor lifestyles.

Systems-Based

Recognising infrastructure as a complex, interconnected system of systems that must deliver continuous service to society.

Since the industrial revolution, the infrastructure that underpins our cities has developed into a complex, interconnected system of systems. We did not always have the tools to envision the system in its entirety and thus manage it as a complete system. But, with vastly improved data-processing power and the ever-increasing abundance of data, we can now address interconnected challenges in a way that would previously have been unthinkable.

Data Is Key to Address the Plethora of Challenges Cities Face Across Numerous Sectors

The opportunities are considerable if we can unlock the systems approach. Examples would include:

- Integrated energy systems: Digital innovation and new energy technology enable engineers, striving for ultimate energy efficiency, to work across the supply/demand boundary. For example, traditionally the flexibility needed in our electricity system to match supply with demand has been provided through adjusting supply-side generation. But smart, decentralised energy systems create the opportunity to access a huge, dormant flexibility asset that exists within cities – in the thermal mass of buildings, in heating systems, hot water tanks or in electric vehicle batteries.

- Green infrastructure and resilience: Trees, green roofs/walls and parks absorb airborne pollution, reduce carbon emissions (through shading and evapotranspiration), provide shelter, decrease soil erosion, enhance biodiversity, benefit health and well-being and encourage physical activity. Where designed as part of an integrated system, green infrastructure can also help manage water resources and mitigate flood risk.

- Accessibility: The design of cities, in terms of spatial proximity to services and digital infrastructure, can facilitate a modal shift away from motorised transport, helping people walk or cycle to their destinations and leading to better citizen health and well-being, improved air quality, reduced carbon emissions, local economic uplift and social inclusion.

Use of system-level data will improve cities' ability to track these beneficial outcomes and make transparent and replicable decisions based on them.

However, the challenge involved in unpacking our historical construct is not to be underestimated. Helping a whole industry push through invisible boundaries that are steeped in precedent is a significant undertaking. Arguably the shift is so great that the change needs to start in the education system and the teaching of new "systems thinkers" who are comfortable with interconnectedness and the tools for engaging with it.

New Value Paradigms

One of the challenges of adopting this new way of thinking is our approach to cost. As the "Flourishing Systems" paper outlines, our industry has historically based decisions on capital cost. But with a better understanding of what constitutes a successful outcome and the ability to envisage an interconnected city system, there are new ways to monetise value. Technology is allowing us to "servitise," and the possibilities are endless.

Take "Heat as a Service" (HaaS) for example. The increasing integration of the energy system – across the supply/demand boundary, between the provision of heating and cooling, and even across sectors such as heat and transport – creates the potential for a new operating model for the provision of heating and cooling, based on the sale of thermal comfort rather than the sale of energy.

This approach could assist in the decarbonisation of cities as, given the complex and fractured nature of the supply chain related to the provision of heat, it is likely that a new operating model with fewer actors could optimise capital and operating expenditure, improve the ability to implement change and reduce system inefficiency. Once established, it may also provide the opportunity for previously unexplored monetisation avenues given that, as the operator is now

selling an outcome (thermal comfort) as opposed to an output (kWhrs of energy), it has more freedom to innovate in the provision of the service.

Again, the availability of and ability to make sense of cross-sector information underpins such innovation.

Resilience
Through a smart cities approach, cities can increase social and economic resilience by:

- Reducing vulnerability: Treating the city as a system of systems can help city authorities understand where potential points of failure exist and highlight the best places to instill new resilience, resulting in lower long-term costs for the city.

- Conducting scenario planning: In a time of fast-moving change, there are many possible futures, and scenario planning can help us steer towards a preferred future – one that is resilient in the face of deep uncertainty.

Bringing It All Together
The increasing availability of data will assist in understanding how city systems interact, enabling earlier warnings of potential system shocks, better decision making, more effective use of assets and improved predictions of cause and effect, thus increasing system resilience.

However, before we can make great strides in applying the power of data and technology to analyse inter-sectoral city dependencies, we must be able to recognise, challenge and deconstruct these silos so that we apply our skills to the right problems – the ones that will bring the most benefit to society.

This is the underlying premise that drives our smart city leaders. It can be a game changer when disruptive technology and the fast-moving power of AI are combined with the industry expertise whose remit has always been to create better places to live, using the available tools of the day to improve outcomes for people.

An earlier version of this essay was originally published in SmartCitiesWorld in 2021. Reprinted with permission. Link: Latest news and case studies - Smart Cities World. SmartCitiesWorld is a forum to encourage these two historically separate industries to come together in support of a flourishing global future.

Since its original publishing, in the explorative spirit of the essay form, author Clare Wildfire invited colleague Lissadell Karalus-Breinholt to add perspective and introduce new questions. Comments follow:

On Autonomous Vehicles …

- We're still debating the ethics of driverless vehicles three years later. What does this say about the relationship between efficiency and social outcomes? And when we're seeing a move towards pedestrianisation and 15-minute cities, does efficiency still mean speed, or does it rather mean closeness and convenience? Do we still want a physical world that gets us from A to B at high speed, or do we want to save that type of efficiency for the digital world and focus on leisure and presence in the physical world?

On Green Infrastructure …

- Green infrastructure and resilience was once a relatively novel concept, but it's now an idea everyone is familiar with. Is it becoming a reality in the way we expected? How has our relationship to mitigation versus adaptation changed?

On COVID-19's Urban Impact …

- When this was written, we were on the tail end of COVID-19. Did we know then that it would have such an impact on how urban spaces are used? How must our paradigms change to accommodate a post-COVID urbanism in which the productivity of a service economy is now largely digitalised and the demands placed on urban infrastructure are increasingly geared towards leisure?

On Systems Adaptability …

- And what do these developments mean from a systems perspective? We have designed a complex system based on needs and assumptions that have now changed. Since infrastructure is far from the most adaptable system, how do we facilitate innovation in a system seemingly hypersensitive to external/organic changes and insensitive to the purposeful changes we try to make?

In search of responsible answers, we continue to ask such questions. Join us.

Clare Wildfire is Global Cities Lead with global engineering, management and development consultancy Mott MacDonald. Having led regeneration, low-carbon and sustainable innovation projects across the globe, Clare uses systemic engineering to push boundaries and, most importantly, improve people's lives. From her 35 years' experience in the sector, originally as a building services engineer on sustainable buildings, she combines her practical understanding of construction and development drivers with policy engagement, bringing insight into the technical, political, financial and behavioural aspects of sustainable development and healthy, resilient, low-carbon living.

Lissadell Karalus-Breinholt is a management consultant in international development services at Mott MacDonald, supporting urban infrastructure interventions. With a background in the delivery of systems-thinking programmes across education and sustainability sectors, Lissadell is passionate about systemic approaches to development. Her work is driven by a belief that integrated systems are key to creating sustainable and impactful change in communities globally.

CONSEQUENTIAL QUESTIONS
OVERCOMING PERCEPTIONS

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Lynn Simon discusses resilience in the pursuit of systemic solutions.

CONSEQUENTIAL QUESTIONS
OVERCOMING PERCEPTIONS

Lynn Simon

Principal and Americas West Climate & Sustainability Services Leader, Arup

DesignIntelligence (Michael LeFevre, DI:) We're talking with Lynn Simon, FAIA, LEED Fellow, a principal and the West Sustainability Services Leader in global sustainable development consultancy Arup's Americas region. Welcome, Lynn.

Thank you for taking time from your busy schedule to speak with us. Our theme for Q4, and for our Q1 summit event in La Jolla in January, is consequential questions. In your role, you must face this topic on an ongoing basis. I'm guessing that you may be someone not only charged with asking such questions, but also with determining which ones to ask. Am I on track?

Lynn Simon (LS:) You are. On a regular basis, clients come to us with consequential questions about the effects of potential outcomes of a particular sustainability action. For instance, when we are talking about integrating operable windows into a project and discussing that occupants generally prefer environments where they can adjust conditions to their liking, we still get resistance and pushback. In the appropriate climate, there can be significant benefits for installing operable windows including decreasing heating and cooling loads resulting in potential energy and cost savings. There can also be psychological benefits to the connection to nature often leading to reduced stress while promoting overall well-being.

DI: What are some of the significant current and emerging questions you are facing, either forced upon you or self-developed within your personal or firm value system?

LS: The ones we're seeing most often include:

- **Material innovation**
  For example, how can architects and engineers reduce reliance on high-emission materials like steel and concrete and promote alternatives such as bio-based materials, such as mass timber, that are often lower in embodied carbon?

- **Policy and systemic change**
  What role should architects and engineers play in sustainability-oriented policymaking to catalyze systemic change?

- **Energy efficiency**
  How can architects and engineers design net-zero buildings that generate as much energy as they consume?

- **Adaptive reuse**
  How can existing structures be retrofitted to meet sustainability standards and preserve cultural heritage while reducing waste?

- **Climate resilience**
  How can buildings be designed to withstand extreme weather and contribute to enhancing urban climate resilience?

- **Overcoming perceptions**
  How can design professionals address the misconception that sustainability involves trade-offs with other goals like cost savings or cultural preservation?

DI: That's a thought-provoking list. I imagine you can examine such questions from multiple perspectives: your clients, design and construction partners, your own staff, and then, in the larger sense, your constituents—those with whom you may not have direct or contractual relationships with but who are affected by your work?

LS: Yes. People spend approximately 87% of their time indoors and an additional 6% inside vehicles, which means that on average, individuals spend about 93% of their time in enclosed environments.[1] Given this, most people are affected by how residential and commercial buildings are designed, constructed, and operated. In addition, since the building

> "I believe it begins by understanding why there is resistance. Why are many architects, engineers, and other building industry professionals still resistant to integrating performance, sustainability, resilience and social elements into their projects? And how do we avoid or eliminate those barriers?"

industry is a major contributor to global greenhouse gas emissions (over 40% including both building operations and embodied carbon) we not only have a responsibility but an imperative to design, construct, and operate our buildings as sustainably and resiliently as possible.

DI: Our unstated assumption is that the questions are becoming tougher and are carrying greater consequences than ever, as systems and responsibilities converge. That is, the responsible designer now must assume a larger role in the environmental outcomes of their design and other related decisions. That we must work to optimize the consequences. Do you agree?

LS: Absolutely. And I believe it begins by understanding why there is resistance. Why are many architects, engineers, and other building industry professionals still resistant to integrating performance, sustainability, resilience and social elements into their projects? And how do we avoid or eliminate those barriers?

DI: Can you give us some examples of the kinds of resistance you have faced in recent projects?

LS: People are often hesitant to move forward with approaches that they are not familiar with. For example, certain client types may not be as conversant in the modality of engineering and sustainability. We all tend to want to translate the subject at hand to the language we speak in our personal professions and the paradigms in which we live. This way of thinking keeps us inside our comfort zone and enables us to add our particular kinds of value. That translation is where the hurdles arise, as well as the magic in instances where you can overcome the challenges.

On a recent project, a client did not initially understand the value of decarbonization. It was only after we led an extensive internal and external stakeholder engagement process that we were able to demystify the challenges and elevate the benefits, which include reducing energy bills while also contributing to the company's climate action goals.

DI: How are you succeeding in instilling ownership of larger issues (social, environmental, economic, et al.) in your staff? Or have we crossed the line where your employees bring this passion to their careers on their own?

LS: At this point, many of my colleagues at Arup have embraced ownership of these larger problem sets. There is seldom a need to articulate the problems internally or motivate our staff to seek and find solutions. At Arup, sustainable development is everything, and this ethos is demonstrated in how we communicate with our clients and how we deliver our projects. It is very gratifying when I am in a client meeting and Arup's structural engineers are talking about embodied carbon with our clients and highlighting opportunities to use mass timber or specify low carbon concrete.

DI: With project pressures as they are, I can imagine raising tough questions— even on occasion beyond scope—goes against one's economic grain. What you referred to earlier as "overcoming perceptions". By that I mean, they could cost you, your firm, your partners or clients more money or time to address, but are the right thing to do, even at the risk of alienating other team members. Can you relate? As an industry leader, what strategies do you employ to cope with such challenges? Persuasion? Education? Because the conventional answers have been: "That's not my job…" "That's outside the project scope…" "We're only dealing with first cost budget…" and many other similar, wrong-thinking responses. And if we're in our customer service mindset, where the customer is "always right", how do we win them over when they may not be right?

LS: At this point, I believe we have many of the solutions and technologies to accelerate meeting our climate goals. The issue is: How do we shift mindsets and influence behaviors? Change management has not typically been a discipline embedded in the culture of many design organizations, yet as architects and engineers, we are constantly dealing with evolving dynamics and trying to be change leaders. Many organizations assume that creating goals and a roadmap is the solution, rather than focusing on the foundations of a project. Frankly, success requires treating the change management process as a "design" problem, intentionally engaging clients strategically, from the beginning and throughout the process, to ensure buy-in early on so that climate and sustainability goals are embedded and become standard practice.

DI: Have you had any success in changing the rules of the game or incentivizing thinking and actions in new ways to reward those taking on greater risks or larger issues? Can you share an example of a project or an aspect that was transformed because someone asked the "unasked" questions or reframed them? How did those come about?

LS: One way to change the rules of the game is through policy and codes. While these "rules" may not be fully implemented across sectors and geographic regions, when sustainability becomes part of code or policy, efforts are accelerated. One example is when LEED certification is required by municipalities, there are significant increases in energy and water operational efficiencies, improved indoor air quality, and reduced waste to name a few sustainability improvements I've seen on projects.

Another example of how codes can accelerate sustainability efforts is evidenced by the 2024 Cal Green Code which introduced requirements for reducing embodied carbon in non-residential buildings over 100,000 square feet and school buildings over 50,000 square feet. When working with this code, the project team has the freedom to comply with one of three pathways to address embodied carbon: building reuse, whole building life cycle assessment (WBLCA), or a prescriptive approach for specific products.

And one more example that also started in 2024, is that cities, counties and state agencies with fleets of more than 50 vehicles must ensure that 50% of all new vehicle purchases are zero-emission. By January 2027, the zero-emission requirement increases to mandate 100% of new vehicle purchases.
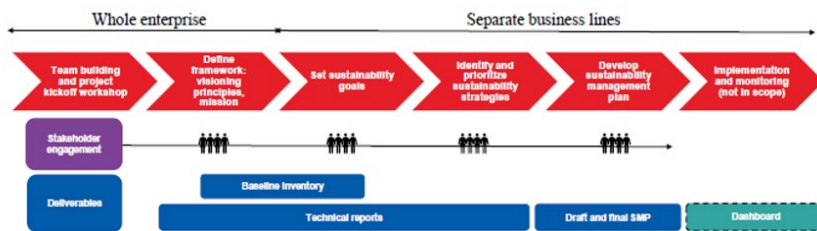
Decarbonization Process, diagram courtesy Arup

DI: Clearly, changing policy and requirements changes results. Beyond reframing the questions, I'd like to dive into the decision-making process at Arup. Once you have framed the questions, can you share the mechanics, the process the firm uses to weigh, evaluate and resolve weightier issues? As a global firm you are blessed with resources, people, systems and brainpower most don't have access to. As our problems have become more wicked, the need for more sophisticated tools seems greater than ever. Are there any systems-thinking related tools you can share?

LS: At Arup, when addressing decarbonization, for example, we take a staged, systematic approach that helps our client start where change is easiest and most affordable. Diagrams like the one below help our clients visualize where we are in the process. As a result, they can better understand and minimize their impacts by preparing baselines and net-zero strategies and targets, while developing whole life cycle reduction pathways and supporting implementation. Further, when it makes sense, we can also introduce new technologies and digital solutions to accelerate and manage the complexity presented by the decarbonization process.

DI: What is the one question that drives you? The question I've forgotten to ask that you'd like to speak to?

LS: How can I effectively balance integration of sustainability practices with organizational change to achieve long term environmental, social, and economic benefits?

DI: Well, chosen. A question that has the potential to keep you engaged throughout the rest of your career. I've really enjoyed the discussion, Lynn. Thank you!

LS: It's been a pleasure to have this opportunity to share my thoughts and contribute to the conversation around consequential questions. When we summon the courage to discuss the hard, complex challenges, the more likely we are to achieve our climate and sustainability goals in the near and long term.

MEDIA

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Lynn N. Simon, FAIA, LEED fellow is a principal and Arup's Americas West Climate and Sustainability Services leader. Based in San Francisco, she has over two decades of experience influencing behaviors and shifting mindsets to reach climate, sustainability and equity goals across tech, real estate and AEC sectors. Lynn's role is market focused, advocating for sustainable development practices from decarbonization to resilience. Lynn serves as the chair of the AIA California Climate Action Committee. She holds a Master of Architecture from the University of Washington and earned a Bachelor of Arts in Environmental Design from University of California, Berkeley.

[1] The National Human Activity Pattern Survey (NHAPS): A Resource for Assessing Exposure to Environmental Pollutants, by Neil E. Klepeis and others, and published by the Lawrence Berkeley National Laboratory.

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OBSERVATIONS

"The master key of knowledge is, indeed, a persistent and frequent questioning."

— Peter Abelard

"The most serious mistakes are not being made as a result of wrong answers. The true dangerous thing is asking the wrong question."

— Peter Drucker

"The power to question is the basis of all human progress."

— Indira Gandhi

"What are you trying to do – one of the easiest to ask and most difficult to answer of questions."

— Robert K. Greenleaf

"There are no right answers to wrong questions."

— Ursula K. Le Guin

"Life's most persistent and urgent question is, 'What are you doing for others?'"

— Martin Luther King, Jr.

"The greatest compliment ever paid me was when someone asked me what I thought, and attended to my answer."

— Henry David Thoreau

"Never ask a question unless the answer makes a difference."

— Proverb

"In nature there are neither rewards nor punishments; there are consequences."

— Robert Green Ingersoll

"Decisions, not conditions, determine what a man is."

— Victor Frankl

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