A Conversation with Jacobs

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Where does the push for data-driven projects come from? How does a global firm collaborate, innovate and use data?? In this discussion, three leaders of Jacobs' global initiatives share their experience.

DesignIntelligence (DI):
Our focus for this interview is how Jacobs is using research and innovation to make a difference in projects. Can you briefly introduce yourselves?

Natasha Luthra (NL):
I've been with Jacobs for over 10 years. I am an architect by training and practice, and over the last 10 years I've entered the technology space. I started as a BIM manager and then became interested in emerging technologies and what that means to us as an industry. I also run our global innovation program — a grant program that funds innovation across the company.

Ellen Sisle (ES):
I head up our Global Practice in Science and Research. I am also an architect by training and by practice. I've been working now for 35 years, 25 of those with Jacobs, and the client focus is primarily pharmaceutical, biotech, science-and-research-related facilities for government and academic institutions.

Nancy Siefert (NS):
I'm the Global Solution Leader for Interiors and Strategy for Jacobs as part of our built environments team. I've been a part of Jacobs for 20-plus years.

DI: How did you evolve into your current roles?

NL: Even though I've been here 10 years, I haven't had the same job two years in a row. The pace of technology changes so rapidly. It's been interesting to follow that as we grow as an industry and as a company.

ES: At the beginning of my career, being exposed to this type of work was circumstantial. But it was something I gravitated toward. I've always had a science and math head but have been fascinated with how individuals work and how the environment they work in supports that work — particularly around R&D labs where a lot is required of the space to enable the work.

NS: I'm a designer by training — a fine arts major in college and then to graduate school for a more focused look at people and work. Natasha, Ellen and I share an interest in how people work and how physical environment and technology support people working. The industry has focused on this over the last few years.

DI: In your roles as change agents is there a plan, or is it reactive?

NL: There is a plan, and you never make the plan! Our biggest challenge is our sheer size, serving 30,000 people in the organization. How do you get to that many people and get from them the kind of work they're doing? Innovation and research happen every single day across the organization. Communication is a massive task internally. Scale is where we struggle most, but we also delight in hearing about amazing things happening around the world every day.

ES: In addition to our size, the client has to be ready to engage in exploring

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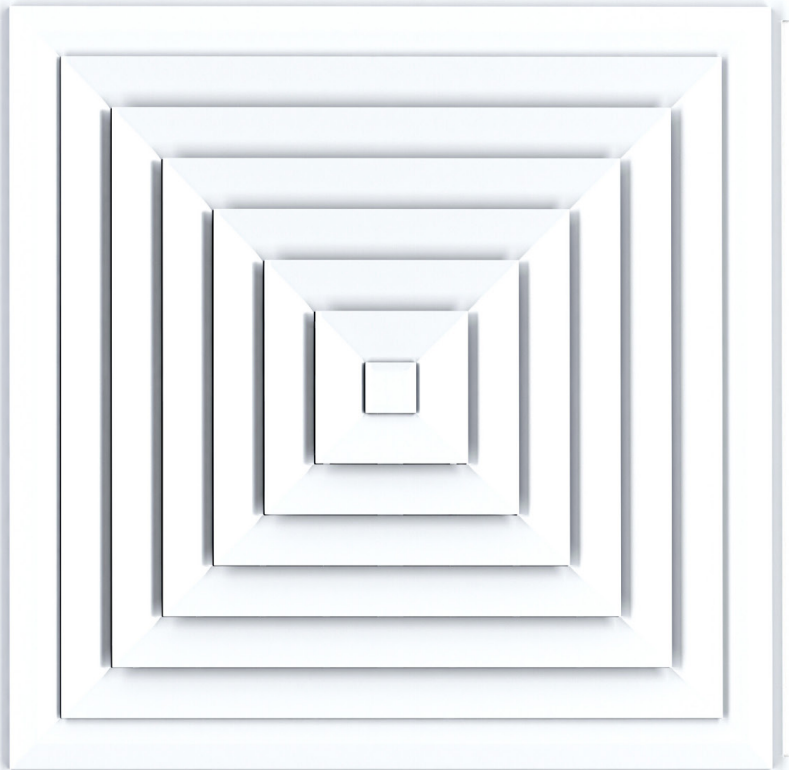
the ways in which innovations and technologies can impact project content or delivery. The project pace and approval levels inside a client's organization can present a challenge. It's most successful when a client comes to us with the specific aim of looking to do something in a different way, has created a project out of that, and is looking within his or her organization for a test project to apply that learning to.

DI: Ellen, as the person whose job it is to lead design process for science-and-research-based facilities, can you share any examples of when you've had one of those good clients — availing yourself and the project team of shared knowledge that resulted in a better outcome?

ES: A great example is a recent project we did for Merck in San Francisco. We were teamed with the construction management firm DPR. The client was motivated to incorporate the target value design and delivery approach with aspects of IPD and lean delivery. They were open to working with the CM, Jacobs and their own staff to embark on the project in a different, nontraditional way.

The outcome was successful — I know it sounds like a cliché, but we delivered on budget, on time, with a high level of trust and collaboration between all team members. It was almost 300,000 square feet. That's a large-scale innovation in project delivery.

At a small scale, innovations in engineering often impact projects. Then, that moves the client to accept technology in a wider way. A few years ago, we were doing a renovation converting biology labs to chemistry labs. There were new fume hoods on the market that used considerably less air, but the clients were reluctant to incorporate the technology because, at the time,



only one vendor made them. There wasn't time to vet the product with a safety group, an HVAC group, a procurement group and anybody else who might have to give this their blessing.

But, because it was the only choice to facilitate the renovation, we incorporated these innovations. That allowed the client to see how they worked on this smaller project and then feel comfortable incorporating this technology in other projects. We are often faced with the same dilemma: in the pace of the project, it's too late to have all parties agree to incorporating something that would involve a change in their standards.

DI: Nancy, as the firm's workplace strategy leader, you've been collecting data to move from: "I'm the expert, I have the experience, I'm just going to intuit this design," to: "Let's avail ourselves of data that can improve outcomes." How is that working?

NS: At Jacobs, we've been actively collecting data for 30-plus years. But we use data differently now than we did in the past. Technology advancements and globalization are having a huge impact on how we work. If anything, the pace of change is increasing daily. Clients are realizing they have to do more with their workspaces to support their businesses.

Real estate is typically the second largest cost, behind people, so what can they do to better optimize the space? That doesn't mean driving to less space but driving to space that supports the work and is able to adapt.

Where does the drive for research and innovation come from? Are clients asking for it? Is it a top-down firm mandate? Or, do you see yourselves as grassroots, bottom-up folks driving change?

NL: It's both top-down and bottom-up. This desire for change and innovation

is completely coming from top-down. But we also see research opportunities and innovation at office, regional, national and market levels. We're trying to capture that information in a cohesive way. That top-down approach combined with bottom-up enthusiasm brings it together.

NS: Natasha and I were part of a presentation on the future of work delivered to our senior leaders last year. This conversation was not imaginable a few years ago. The executives knew the importance of changing how we work together. The push for talent is becoming the holy grail everyone is after — that and how you create an environment to attract those best thinkers.

The way we work is not just physical space. It's also work-processes, the tools to bring it together and the culture of how you work within it. It's a topic we're exploring within Jacobs, and our more sophisticated clients are having the conversations with us.

DI: Is there a story where these initiatives are making a difference? Or, on the dark side — what's keeping you up at night?

NS: We have a global financial service client we've been working with for 20-plus years. They realized they needed to change how their teams worked. Together, in a tight timeframe, we created a work environment to be used as a pilot. Interestingly, the senior executive team was willing to completely put themselves out there about how they worked. They set the example for the entire organization.

It was a wild success. The organization recognizes now that they need to change how much of their physical space works based on the outcomes from that pilot. And to capture the data from that success, we're continuously monitoring that space now.

More and more organizations realize nothing is stagnant. They might create a fabulous space today, but if a year from now, they are working in a different way, the space might not support it. So, it's critical to continue to monitor and adapt the space to support people.

Still, we're not doing this fast enough.

NL: Many of my success stories are confidential, but there are cases where clients have pushed us outside of our comfort zone. They made us think about things differently or asked us to reimagine how we work. We've had both the most success and the most difficult work with those kinds of clients.

DI: Nancy, you said you were monitoring. You're talking about metrics, sensors, data, right? Hard data?

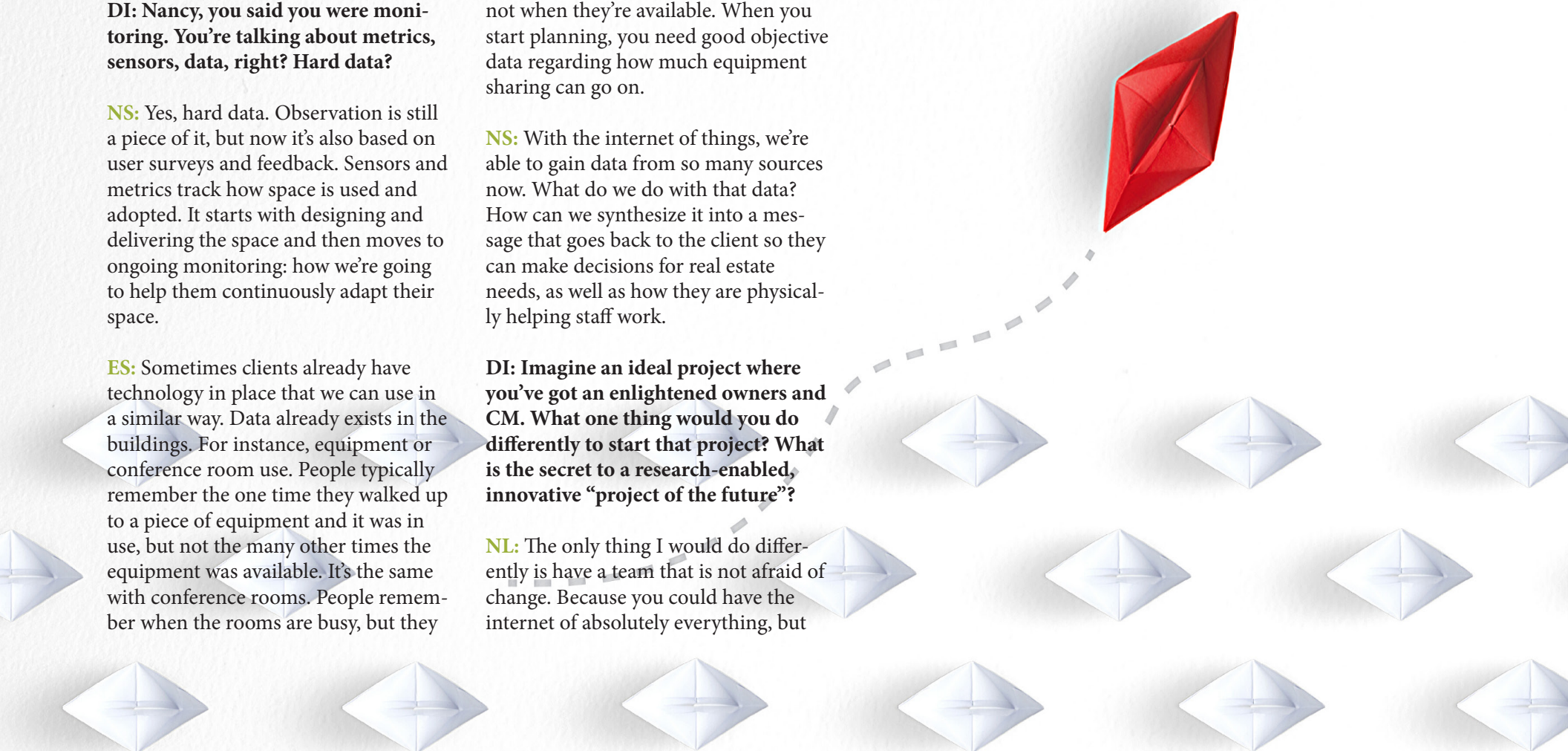
NS: Yes, hard data. Observation is still a piece of it, but now it's also based on user surveys and feedback. Sensors and metrics track how space is used and adopted. It starts with designing and delivering the space and then moves to ongoing monitoring: how we're going to help them continuously adapt their space.

ES: Sometimes clients already have technology in place that we can use in a similar way. Data already exists in the buildings. For instance, equipment or conference room use. People typically remember the one time they walked up to a piece of equipment and it was in use, but not the many other times the equipment was available. It's the same with conference rooms. People remember when the rooms are busy, but they not when they're available. When you start planning, you need good objective data regarding how much equipment sharing can go on.

NS: With the internet of things, we're able to gain data from so many sources now. What do we do with that data? How can we synthesize it into a message that goes back to the client so they can make decisions for real estate needs, as well as how they are physically helping staff work.

DI: Imagine an ideal project where you've got an enlightened owners and CM. What one thing would you do differently to start that project? What is the secret to a research-enabled, innovative "project of the future"?

NL: The only thing I would do differently is have a team that is not afraid of change. Because you could have the internet of absolutely everything, but



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— and this is true of every single one of us — if we are still afraid of change, I don't think we'll be successful. To be able to build that sort of culture means not being afraid of failure and having the ability to deal with change.

NS: It's no longer just about work or office or lab space, it's about how we can support people. In my ideal future, we will have the ability to seamlessly bring together the expertise needed for a project. I want to be able to tap into expertise around the globe. If we can break down the barriers among ourselves, we can be a game changer as we move into the future.

ES: We emphasize that a lab is just another workplace. It has a lot of technical requirements, but it's still a workplace. For people.

NS: The future is exciting but scary. I'm hoping people see it more as exciting than anything else.

Natasha Luthra is the Director of Emerging Technologies at Jacobs. She runs an Emerging Ideas Innovation program focused on incubating transformational ideas, technologies, and tools - cultivating and validating emerging ideas based on client needs. She facilitates the Jacobs strategic mission to advance the practice through innovative processes and client workshops to co-create and co-develop solutions for envisioning and preparing for the future. She has spoken about technology, innovation and architecture at conferences such as Autodesk University, BILT NA, BILT Asia, BIMForum and the AIA National Convention and has been featured in and written articles for the Architect Magazine, YAF Connection and AUGI World. As the 2018 Chair for Technology in Architectural Practice, the AIA knowledge community, she hosted the 2018 Building Connections Congress in Washington DC, on the future of design in the age of AI and Machine Learning. While trained as an architect, her impetus is to be the tip of the spear related to technology in design.

Ellen Sisle is Principal, Global Director Science & Research with more than 30 years of science and research experience, including programming, planning, project management and operation-based sales. Her clients include government, higher education, academic, medical and pharmaceutical organizations. She is a frequent presenter at industry conferences and co-author of a book on the sustainable design of laboratories, published by Wiley. An active member of the architectural community, Ellen has served on numerous juries and is a board member of her community's historic preservation association.

Nancy Siefert is Vice President and Global Director for Interiors and Strategies Solutions. She leads Jacobs Building Interiors Solutions after serving as Division Vice President and Market Sector Leader for interiors and workplace performance. Her strong leadership skills and passion for clients built national teams for clients such as Shell, Abbvie, J&J and JP Morgan over her 35 years of experience in interior architecture for corporate professional and high-tech multi-use facilities. Nancy joined Jacobs in 2012 through the acquisition of KlingStubbins.