Archipreneur

insights

Built Environment Innovation

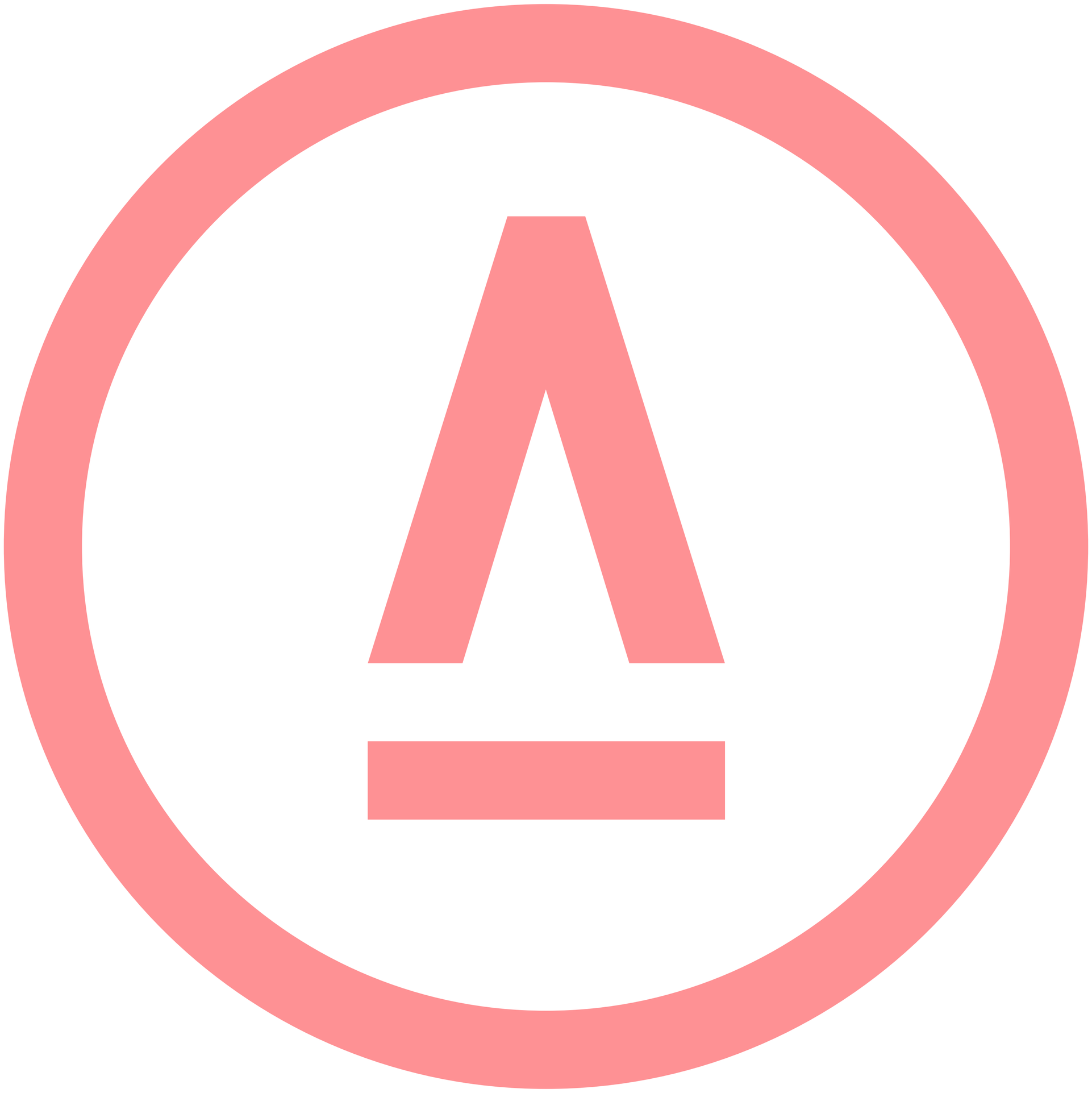
INSIGHT INTERVIEWS WITH ATELIER MEL, CHRIS PRECHT, LAVA, MANIFESTO AND OTHERS

STEP-BY-STEP STRATEGY
How to Take Your Practice to the Next Level

KPI'S: METRICS FOR SUCCESS
How Architects Should Measure Business Growth

Q1 / 2019

ISSUE 02



editor‘s letter

Welcome back. For the second edition of Archipreneur Insights, we have assembled another interesting mix of stories, case studies and articles surrounding the future of the architecture in our cities. The expanding role of practice is a relevant topic for both young and established professionals around the globe. Our expert contributors from the world of design, technology, construction and development have all found their own path of innovating for themselves and within their business.

In this edition we feature designer entrepreneurs like Chris Precht from Austria and LAVA from Berlin who share their thoughts and approaches on the future of architecture. Also, Maria from Atelier MEL in Spain describes how she used her design background to bridge the gap between traditional crafts and technology. Then we have several architects and engineers turned tech-entrepreneurs who are all building start-ups for the built environment like BIMMUNITY, cove.tool, KEWAZO and Skillary. You can also read an inspiring architect-developer case study with Martin Barry and the Manifesto Market from Prague. Lastly, you will find contributions from a few architectural business consultants who discuss relevant strategies and key performance indicators (KPIs) in order to build, run and grow a successful design practice.

Our mission is to make a meaningful contribution to the profession and to explore what the future of architecture holds, in a time of a quickly globalizing world. Each experience is crucial to our shared understanding of the building industry today and how we can contribute to its progression. That is why we produce the Archipreneur Insights story by story and issue by issue, to share the latest and most innovative content. We would love to hear your thoughts and feedback so we can continue to craft the publication to be relevant for you as our reader.

Thanks for your support, contribution, and happy reading!

Best Regards,
Tobias Mäscher

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Innovating Experiences: Defining the Future of Urban Retail Design

MANIFESTO MARKET IS AN INTERNATIONALLY RECOGNIZED GASTRO MARKET AND CULTURE INCUBATOR THAT WAS DEVELOPED WITH 27 SHIPPING CONTAINERS IN THE CENTER OF PRAGUE WITH GLOBAL EXPANSION PLANS UNDERWAY. IN OUR INTERVIEW LANDSCAPE ARCHITECT AND PROPTECH ENTREPRENEUR MARTIN BARRY SHARES THE DEVELOPMENT STORY OF MANIFESTO AND HIS NON-PROFIT reSITE. HIS APPROACH TO IMPROVE THE QUALITY OF LIFE FOR PEOPLE IN CITIES INCLUDES FRESH AND THOUGHTFUL PUBLIC SPACE DESIGN, SITE-SPECIFIC EVENT AND EXPERIENCE CREATION AS WELL AS DIGITAL PRODUCT INNOVATION.

Could you tell us a little about your background?

I was born in New York City in Manhattan and spent a lot of my childhood in the suburbs. At a very early age, I was particularly fond of construction and gardening. I came at the profession basically through the construction trade.

From a young age I was working in construction building homes and I ran my own landscape crews—my own company—when I was 18 until I was 24. That was through university and graduate school, to the point where I had my first major client with a $1 million-plus construction project when I was 25.

I love designing a public environment. I felt, and I still feel, that one of the biggest needs of our generation is to provide high-quality public space, affordable living, and alternative mobility in cities. I started to migrate towards this, mostly at the beginning, for environmental purposes. I thought that cities needed to be greener, and so my work was focused on that, originally. I also felt that we needed higher quality public spaces in cities.

Through graduate school, I started to work almost exclusively on urban brownfields as a landscape architect under my mentor Barbara Wilks, the founder of W Architecture and Landscape Architecture in New York City. We worked mostly on brownfield redevelopment projects on the waterfront in New York City. I took on international projects, where I worked in about 12 other countries. I was working in the United States, Canada, Asia, the

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Middle East, and on some pro-bono projects in Haiti. Some of my projects have even been built in Europe, as well.

Over eight to nine years in New York City out of W Architecture, I was running quite large projects for Barbara. Our largest, or maybe the happiest project that I had, was in Canada, which was a 12-hectare waterfront park in the center of Calgary. This was the centerpiece park in a $350 million redevelopment project that was completed in 2015 and has since earned dozens of international awards.

You also founded reSITE, a global non-profit acting to improve the urban environment. What is the reSITE idea, mission and story?

Yes, in 2012, I started the nonprofit reSITE, which is focused on making cities greener and more livable through high-quality design and collaborative thinking. We focus on improving the public life of the city.

MARTIN BARRY
FOUNDER & CEO

MARTIN BARRY IS THE FOUNDER & CEO OF MANIFESTO MARKET, AND FOUNDER & CHAIRMAN OF reSITE. HIS WORK HAS BEEN PUBLISHED WIDELY IN THE NEW YORK TIMES, THE ATLANTIC CITYLAB, MONOCLE MAGAZINE, DEZEEN, DESIGNBOOM, AMONG DOZENS OF OTHERS.

AS A LANDSCAPE ARCHITECT, MARTIN HAS LED MULTI-DISCIPLINARY TEAMS ON COMPLEX URBAN PROJECTS IN NORTH AMERICA, EUROPE, ASIA AND THE MIDDLE EAST. HE IS THE 2016 RECIPIENT OF THE PRESIDENT'S AWARD FROM THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS (ASLA), AND HIS PROJECTS AT W ARCHITECTURE HAVE RECEIVED DOZENS OF DESIGN AWARDS IN NORTH AMERICA. HE IS A FULBRIGHT SCHOLAR AND A FELLOW WITH THE DESIGN TRUST FOR PUBLIC SPACE IN NEW YORK.

When I first came to Prague in 2012 as a Fulbright Fellow, the idea was to broaden the horizons of people working in architecture in Central Europe, to think about the kind of work that I was doing abroad, which focused on redevelopment of landscapes in the centers of highly dense environments that needed green, open space designed by landscape architects.

The original mission was to talk about that. Since then we've expanded rapidly beyond the initial idea, focusing on all topics that have an impact on quality of life in the city from the sharing economy to transportation, civic architecture and mobility. The latest topic we investigated was housing.

We're now pushing new boundaries and horizons. In 2018 and now 2019, we're working in San Francisco at the intersection of sound in architecture. We've now migrated through the various topics that we think improve quality of life.

We do this mostly through events and media. We have organized 160 events over the last 6 years, ranging from bike rides and film festivals to these large flagship conferences that we run under our own brand. We've also created and produced hundreds of video interviews and lectures, many of which are on our YouTube page.

We've done most of this work in Prague and we're now in Lisbon, Berlin, and the United States on reSITE topics, media and events.

Since 2015, this has been my full-time job. I spend my time between reSITE and Manifesto Market as the Chief Creative Guy and CEO.

reSITE 2018

Why did you start your business in Prague?

It was one of the hardest decisions of my life, to leave my beloved Brooklyn and hometown of New York City. That was a really traumatic time for me. In 2015, I left my apartment in Brooklyn. I left a partnership offer at W Architecture on the table after we just finished the large park in Calgary. I actually finished three projects in Calgary at that time, and the largest of which had since won over 20 design awards. You might consider this a new peak in my career, at 35 years old. I

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just up-and-left a great thing - what I thought might be the top. It was a hard thing to do, to shift gears and fully focus on reSITE. From the fast-paced New York City to a smaller, quieter Prague, almost overnight. It was like someone turned the lights out and I had to start over. It was me who turned them off.

The idea was to come from what was a kind of nights-and-weekends job for me and full-time for my team, to what's become the focus of my life. I moved halfway across the world to work on a nonprofit. I spun Manifesto Market out of the nonprofit, because the kind of work was changing. The things that we were doing were changing. Some of them needed a sustainable and self-sufficient funding and revenue model.

You said that you were growing tired of what is known as a classic architecture, landscape or urban design firm before starting reSITE. Could you elaborate on that?

Yeah. That definition, it's still true, but maybe the way I think about it has changed a little bit. I wanted to do something different, originally, I wanted to try to get away from strictly client-based work.

I had about 17 projects on my plate that I was actively managing and working on. There was one client, which constituted two or three projects, which I liked. In architecture, you have to take on projects just to keep the office running, and I think every architect experiences this.

WE'RE AN EVENTS AND EXPERIENCE DESIGN COMPANY AS MUCH AS WE'RE A PHYSICAL DESIGN COMPANY. WE ARE INVENTORS OF EXPERIENCES.

Regardless, I wanted to see if we could redefine the work that we did to be more civic and to have more public good in mind. A more kind of social architecture firm that spends time on education. The core of reSITE is about educating people about the ways in which we could build the city differently. I wanted to see if we could build a firm with this kind of approach as the centerpiece of the work. We're an events and experience design company as much as we're a physical design company. We are inventors of experiences.

I think that's what needed to change for me, and I loved the idea to create experiences for people. When I look back at the work I did in landscape architecture, it was all about designing an experience with physical space and using the highest quality materials that we could afford or we could find and the most interesting furnishing arrangements to create social spaces and private spaces at once, and environmentally conscious public spaces. All of this is about an experience and also a kind of light impact.

reSITE

There’s a part of my younger self that thinks this is a betrayal of my training and the path that some of my idols or mentors have taken. But then, I squint, and I think about the fact that I don’t want that prototypical path. I struggle with what’s expected of one in the profession versus what I’ve wanted for myself. I’m happy with the way it’s gone. But, at the same time, I still have this part of me that’s saying like, “Well, you should run a classic architecture practice.” “You should be, you know, just putting your head down and working on the things that everyone trained you to work on.” I mean by this, there’s this kind of paradox.

Why did you start reSITE as a nonprofit?

That’s a good question. I started as a nonprofit because I wanted to do work based on education and events mostly that wasn’t profit-driven. I wanted to focus on the content and not do expos and this kind of activities to fund it. I was able to attract cultural funding and social innovation funding to help educate the decision makers in the private, public, and civic sector. And so, there was a nonprofit mission, and there still is this mission.

I developed it based on models that we have in the United States for nonprofits in this kind of field, between culture and policy. In Europe, this model doesn’t really work. Because in the

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U.S., particularly in New York, there is a high level of philanthropy funding and private benefactors that like to support these kinds of initiatives. So, I realized this after a few years that individuals are not supporting the nonprofit sector.

In the Czech Republic, the average donation from an individual citizen to the nonprofit sector in a fiscal year is about €2.50 per year.

And the grant funding from government institutions and municipal institutions is so low, particularly in the Czech Republic, that it's nearly impossible to create a revenue split like I wanted. Our revenue split today is basically 40% to 45% private funding sponsorships, 40% grant funding, and 15% to 20% is coming from ticketing from our main event. And it's not enough. I really wanted it to be 70% private funding and 20% granting and 10% independent sources of revenue like ticketing.

And it's almost impossible to get there with the level of private philanthropy in Europe. So, I'm starting to think about whether we need to change the model.

What do you think drove you to create these new aspects and businesses within the field of architecture?

I think there's no right path in architecture. I think that it's important that we start to make our own projects.

But people like me, we also love to create our own work. That's one of the reasons why I'm becoming more involved in property development. I found that it was easier for me to get what I wanted out of a project by building it myself than it is to just find a client to do it and to rely on others to do it.

I wanted to create a practice, which is focused on experience and experience design and creating new kinds of places for people to engage the city in exciting ways. What does that mean? Now, it means that we're designing events through reSITE. We're designing physical places and digital communities with Manifesto. We're doing branding and real estate consultancy with another company I have, called City Crew.

I'm combining my ideas based on my educational background. I have a degree in history, which I didn't mention. I have a degree in business, and I also have a master's in landscape architecture. I feel like I'm doing my best to try to combine these skill sets and put them together to wholly understand the world in which we're working and trying to design environments that are responding to that. That's exciting for me.

THERE'S NO RIGHT PATH IN ARCHITECTURE.

I'm spending more and more time now on Manifesto and not just the market that you see online or in the papers. But Manifesto as an idea and as an experiential development company.

Manifesto's turning into a kind of a proptech company, and I think there's a lot of ways the work that we're doing at Manifesto can help modernize the property industry, particularly the hospitality and food and beverage industry at large.

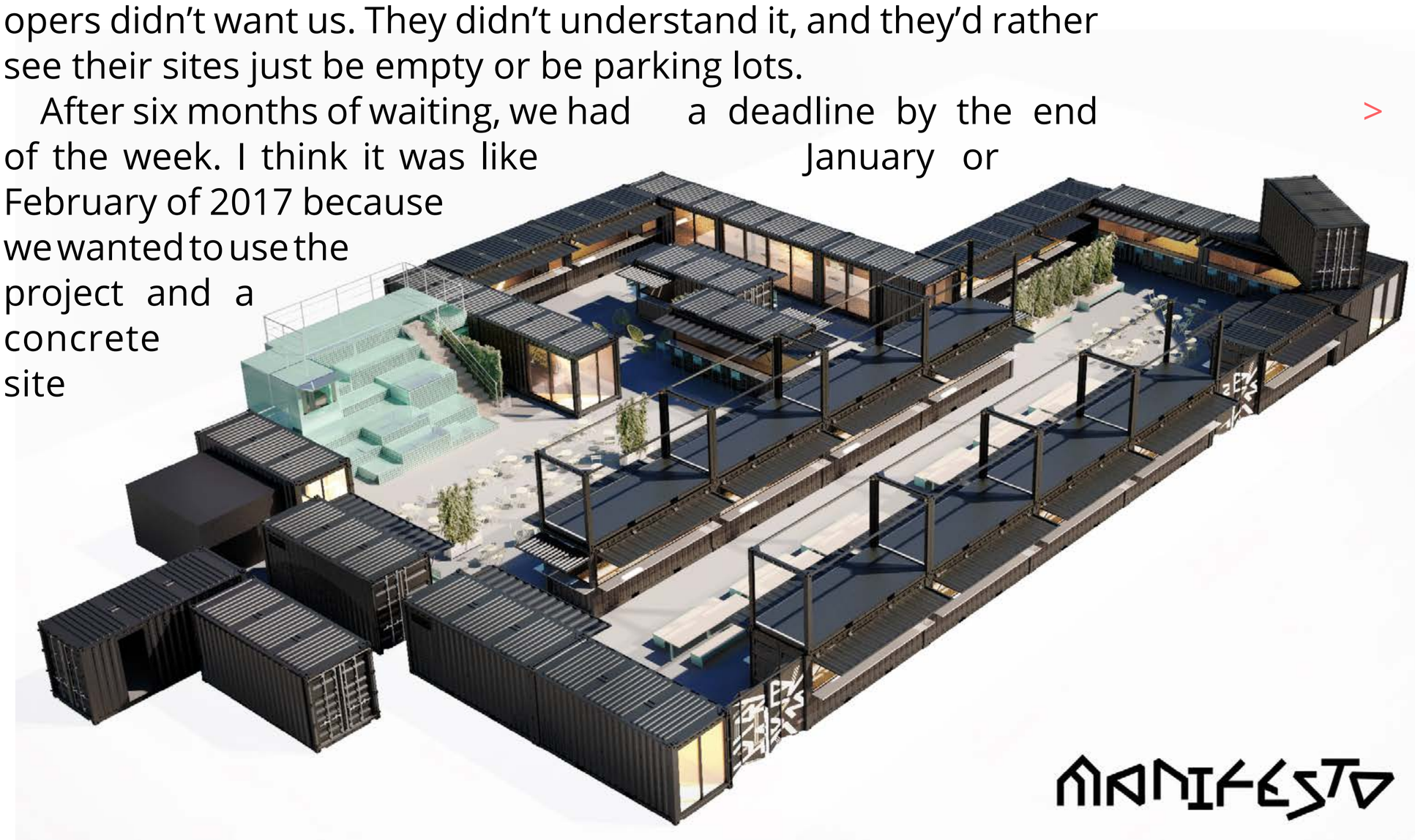
The Manifesto Market is the first brainchild of reSITE. There you have also acted as an urban developer. What is the project's background? How did you manage to start, complete and finance the project?

I had the idea to create this kind of place in 2013 when reSITE was basically a year old. I pitched my idea to do a café and co-working spaces in containers, to a couple of companies and no one was interested. They thought it was stupid and crazy. At that time, it wasn't a full-time job. When reSITE became full-time, I started to pick up this idea again. We really didn't know what we were doing. Looking back, it was kind of crazy.

I knew that we wanted to create a place that had a food and beverage central focus and some opportunities for co-working. Using the container is, for someone that's not a real estate developer, a cost-efficient and flexible unit. It is relatively cheap to build a development out of containers, and they're flexible, and they're considered temporary. You can do it a bit quicker and more affordably.

So, how did we do it? We started with an idea that we wanted to do this. We got the land basically by scraping or scouring my network of real estate developers in the city, which is pretty extensive. We spent some time in Karlin, an up-and-coming district in Prague, because we really wanted to be there, but the developers didn't want us. They didn't understand it, and they'd rather see their sites just be empty or be parking lots.

After six months of waiting, we had a deadline by the end of the week. I think it was like February of 2017 because we wanted to use the project and a concrete site January or



as the centerpiece of a student architecture competition. I made a phone call to one of our partners at reSITE, who's actually our main sponsor. They had this site in Prague, and they decided within 24 hours that they would give it to us for this project. So, it really took less than a day to decide where it was going to be, and we got permission to use it for the competition and also for the whole project.

After the student competition, we selected three finalists. We interviewed all three, we chose the second-place finalists which were a student group of two young women who were finishing their studies in Prague. They then became the architectural consultants for the project. From the competition to the date we opened it took roughly nine months, and they redesigned and redeveloped the project based on our need to expand it.

I found the financing privately. I had some seed funding contributed by a friend. He contributed some seed capital to start and to pay for consultancies and stuff like this. Then, once the project got going and we entered a contract for fabrication of the containers, I had two private loans that allowed us to finance the construction.

These are loans by local businessmen in real estate and in culture, actually. We're combining cultural funding and real estate funding. We didn't get any public subsidies, and that was intentional. We didn't want any support from the city or from the state. We wanted to do this fully independently.

We got some support from the landowner who gave us a friendly lease. It was a way for them to attract attention and to build some positive action on the site before they have construction. It's a free development site. The final project will be built by the developers of Zaha Hadid's project, a quite high-profile site.

Finally, we had support from Mastercard. That's why I wanted to focus on digital payments. Ultimately, we decided on a cashless project, meaning only credit cards or digital payments are accepted. Mastercard supported us through the technology and also with some funding for cultural projects like music and films.

Today, I've been asked to speak a lot about Manifesto. Everyone wants to know how we've been nominated for the best retail project in the country after only 6 months of operations. We won the best customer experience award in 2018 against giant brands such as IKEA. Everyone in property and real estate wants to know how it became so successful. My answer is that we don't know what the hell we're doing. So, that's why it's successful.

The site is awaiting its permanent redevelopment by Zaha Hadid Architects? What will happen to Manifesto Market when the project receives permission?

We have a two-year lease with an extension option. If they don't get the permissions to build the planned Zaha project, then we would stay longer. This is the advantage for such temporary projects in working in the cities that have a long approvals process. Basically, in Prague, the approvals process is about seven years, so you have a lot of sites that are laying empty for six or seven years.

What is the business model of the Manifesto Market?

We have 24 tenants in my 27 containers, and they have a lease with me. It's a typical real estate model in that sense. They pay a flat fee plus services that we offer to keep the place running. We have a turnover rent model as well, in which we take a percentage of what they make. It is a bit like a shopping center lease.

The other revenue streams are pretty straightforward. It is one of the most popular places in Prague right now and a lot of companies want to do events there. So, we're lining up a lot of events for 2019 already.

This year our revenue model gets more complicated. There is a combination of financial technology revenue sources and a classic real estate and events model. We're doing food tours in 2019 because we have 20 really good restaurants. These will be special market tours starting in the spring. We will also have some revenue coming from financial technology that we're developing this year.

What are the next steps and ideas for Manifesto in 2019?

The goal is to develop more. We're now very close to a growth-series round of funding to reinvest in the market and reinvest in the ideas so we can build digital technology for a better customer experience. The idea is to invest in new technology and to build new sites, including another one in Prague and one in Lisbon by the end of 2020.

In 2019, we're becoming more of a PropTech company, because we realized that there's a lot of management that goes into maintaining the site. We started to look for property management tools to do that. The property industry is super outdated but quite simple to modernize. There are no modern tools, other than an Excel spreadsheet to do property management. We're now developing some digital tools that will help the hospitality industry

better manage their projects. And you will be able to find some things in the physical space that can disconnect you to digital spaces.

We're also developing the front-end system for the community of Manifesto, the customers that are coming, just to better inform them about what we're doing and to help them find out about the cultural program, for example.

Then we're developing an integration of new digital payment tools. The market is completely cashless, which means we have the opportunity to employ some new digital payment methods that aren't being used in many places in Europe. We are the first cashless place in the Czech Republic and one of the fully cashless places in Europe. Now, we develop the tools so we will have our own easy payment method for Manifesto.

Do you have any advice for people who are interested in starting their own project or company within the build environment?

» One thing I would like to mention is to never underestimate the value of being collaborative and opening new doors. I spent a lot of time meeting people and seeing if there are ways in which we can collaborate, intersect and offload some value to them, and they could offer the same to me. As an entrepreneur, you have to create a good network. We all need to help other people and we need to be helped ourselves, so I always try to help people if they're asking for it.

My second advice is that you have to remain positive. I could have quit reSITE and Manifesto over a hundred times probably. There's so much bad news when you start your own ventures. Just because one thing doesn't work, it doesn't mean it's not going to work. If you keep your eye on the horizon and on the goal, it just means you have to find a new avenue to get there.

In "The Last Lecture" by Randy Pausch, he says that brick walls are built only for us to figure out how to get over them, not to stop us from achieving our dreams. It's a little bit cheesy, but I really believe that. You've to find a way over the wall, if you really want it.

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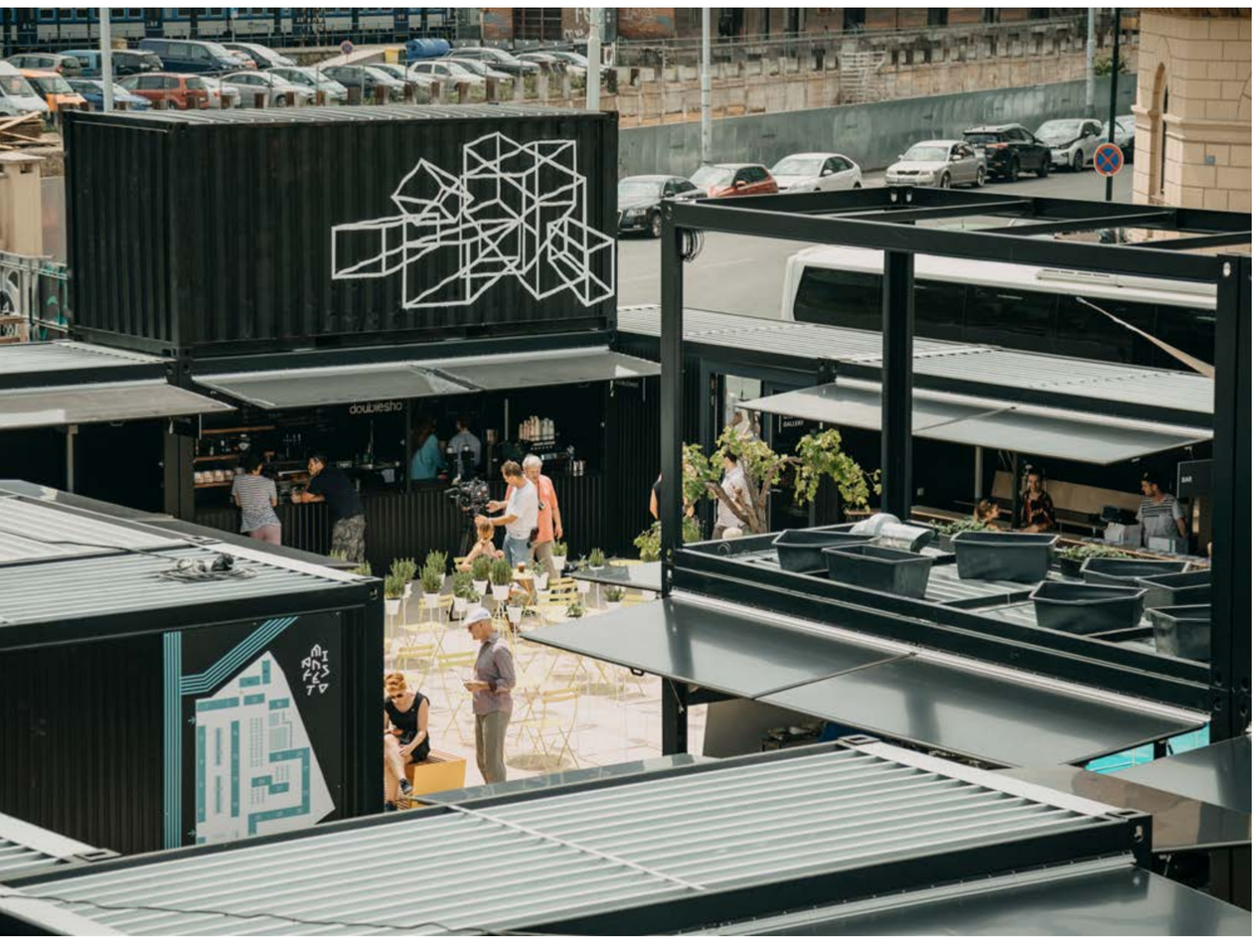
We're talking about a lot of different things, but everything is design-driven. You can utilize this architectural background and knowledge, which is basically about how to understand people. Our work is how to understand people and how to create spaces that people can enjoy and which will improve their lives. That's central to our work.

What are your thoughts on the future of the built environment? What are the major opportunities? How can it improve, and what continues to inspire you?

I always say, the future of the city looks a lot like the past, which is more dense urban environments and more physically networked places. I think we're going to focus more and more on alternative mobility, mobility is probably one of the core issues of our generation. This is an old argument, but transit-oriented development in the United States will become a necessity, as it's been in Europe. We have to stop using automobiles to get between places. Now, it's taken something like 50, 60 years, 70 years, but the effect on cities will take at least as long to unwind. In the UK, for example, 100% of college-educated millennials want to live within 5 kilometers of the central business district. I think 50% of those between the ages of 25 and 34, in the United States, want to also live within 5 kilometers of the central business district.

We want to live in the heart of the city. We want to work, live, and play in the same place. That's only possible if we can rethink how we live, which focuses on the house and what our home looks like. I think we need to start living in smaller urban spaces, as we're already seeing.

The work that we've done on sharing indicates that we're willing to share more, in order to have some of the conveniences of living in a denser urban environment. It means we're willing to share transportation. We're even more willing to share space, to some extent. We've got to rethink the way that we're designing housing, both at this kind of affordable scale and the luxury scale. I think housing is really going to be central to a lot of the changes that we see in how we live in the city. —



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Survival > Sustainability > Success

How to Take Your Practice to the Next Level

BY ROSS CLARK

VIRTUALLY EVERY ARCHITECTURE PRACTICE STARTS IN ‘SURVIVAL’ MODE. MANY ARE PERMANENTLY STUCK IN IT. OVER TIME, SOME GROW AND DEVELOP TO BECOME ‘SUSTAINABLE’ BUSINESSES. BUT RELATIVELY FEW ACHIEVE REAL ‘SUCCESS’. HERE IS WHAT YOU NEED TO FOCUS ON, TO TRIUMPH.

Success in architectural practice can be elusive. Regardless of practice size or years of experience, many practice owners, directors and leaders believe that if they devote most of their energy to creating great architecture, business and financial success will follow. Fifteen years on, they still find themselves struggling in survival mode, never quite winning the top clients or projects that the ‘favoured’ practices seem to attract with ease.

So, what are successful practices doing differently? More importantly, what are you doing, or not doing, that’s holding you back? What’s creating barriers between you and real practice success? The chances are that a quick review of your practice will reveal some, if not many, of these cardinal sins of architecture practice:

1 YOU’RE PLAYING-TO-*PLAY*, NOT PLAYING-TO-*WIN*

Becoming an architect takes a lot of hard work. Getting to the point of founding your own practice is an enormous achievement. You’re in the game!

However, like any creative, just being able to do what your competitors can do will only get you so far. Sure, if you do your best, you’ll probably manage to meet your costs, and you may win some happy clients along the way. But if you aim to be *the* best, to *lead* rather than follow, and to do everything possible to win, rather than just survive, you’ll go a long way to creating not just brilliant architecture, but continuous financial success as well.

Fix:

Engage a suitably experienced business advisor or coach to help you create a clear business strategy. Ensure your plan is firmly based on a winning mindset, by focusing on hard work and not just talent, building resilience and perseverance, taking many small steps, and by being action-oriented rather than reflecting on what might have been. >

2 YOU DON'T KNOW YOUR 'WHY'

Playing-to-win means you need a *plan* to win: A strategy to take your practice where few other practices go. This plan needs to have a specific objective. Otherwise, it's pointless.

In any business, having clarity of purpose is essential to success. This purpose can't just be to create great designs or even to build unique residences. Like Google ("To organize the world's information and make it universally accessible and useful"), Tesla ("To accelerate the world's transition to sustainable energy") or TED ("Spread ideas"), who are all winners in their respective fields, you need to articulate a purpose that can continually drive you and your team to exceed your clients' expectations. This purpose is your 'why'.

Fix:

Take some time out with your team and (if possible) a specialist consultant, to refine and clarify your 'why'.

3 YOU'RE NOT PROACTIVE ABOUT LEAD GENERATION

Offering amazing outcomes won't matter much if you don't have any clients! The same can be said if you don't tell them what your offer is and how it is relevant and unique.

Architects are in the sales business just as any other business owner. Yet many architects adopt the philosophy: Do good work, and the clients will walk in the door. However, the most profitable practices devote time, energy and money to nurturing leads, figuring out where the best prospects come from, and really getting to know and understand those people and organisations they target as potential clients.

Fix:

Develop and implement a lead generation and nurturing program, using suitable software to automate as much of it as possible. The most popular packages include Monday.com. HubSpot, Pipedrive, Salesforce Pardot and LinkedIn.

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4 YOU SELL WHAT YOU *DO*, NOT THE PROBLEM YOU *SOLVE*

Probably the most common mistake architects make in sales and marketing – whether on their website, promotional material or in submissions – is to focus on what they *do.*

Well, guess what? Every other practice out there can design. And document. And administer contracts. And apply for building approvals. What sets you apart, and what will have clients wanting to work with you, and even paying higher fees, is the ability to connect with them. Explain how you're perfectly placed to solve their particular set of problems. Most potential clients only want to know that you're on their page and that you can empathise with their unique circumstances.

Fix:

Reconfigure your marketing to focus on the problems your practice solves. And use storytelling techniques to engage compellingly with prospective clients and shift the focus from product to people, just like Nike, Airbnb and Lego.

5 YOU THINK IT'S ALL ABOUT *DESIGN*

One of the most common motivations for creative professionals starting their own practice is to regain design autonomy. Many architects wish to recapture the design freedom they had at university.

Yes, design is important. It can be critical to your brand and reputation. But you and your team will be lucky to spend 10% of your time in the creative phase of design. The rest of your time will be spent planning its execution and doing non-designerly things like making your business actually run. Devoting unrealistic amounts of time to design might make you feel great, but it won't lead to success.

Fix:

Track the time you and your team spend on all tasks and, based on the evidence you collect, ensure you maintain a sensible balance of income-producing time and non-income producing time.

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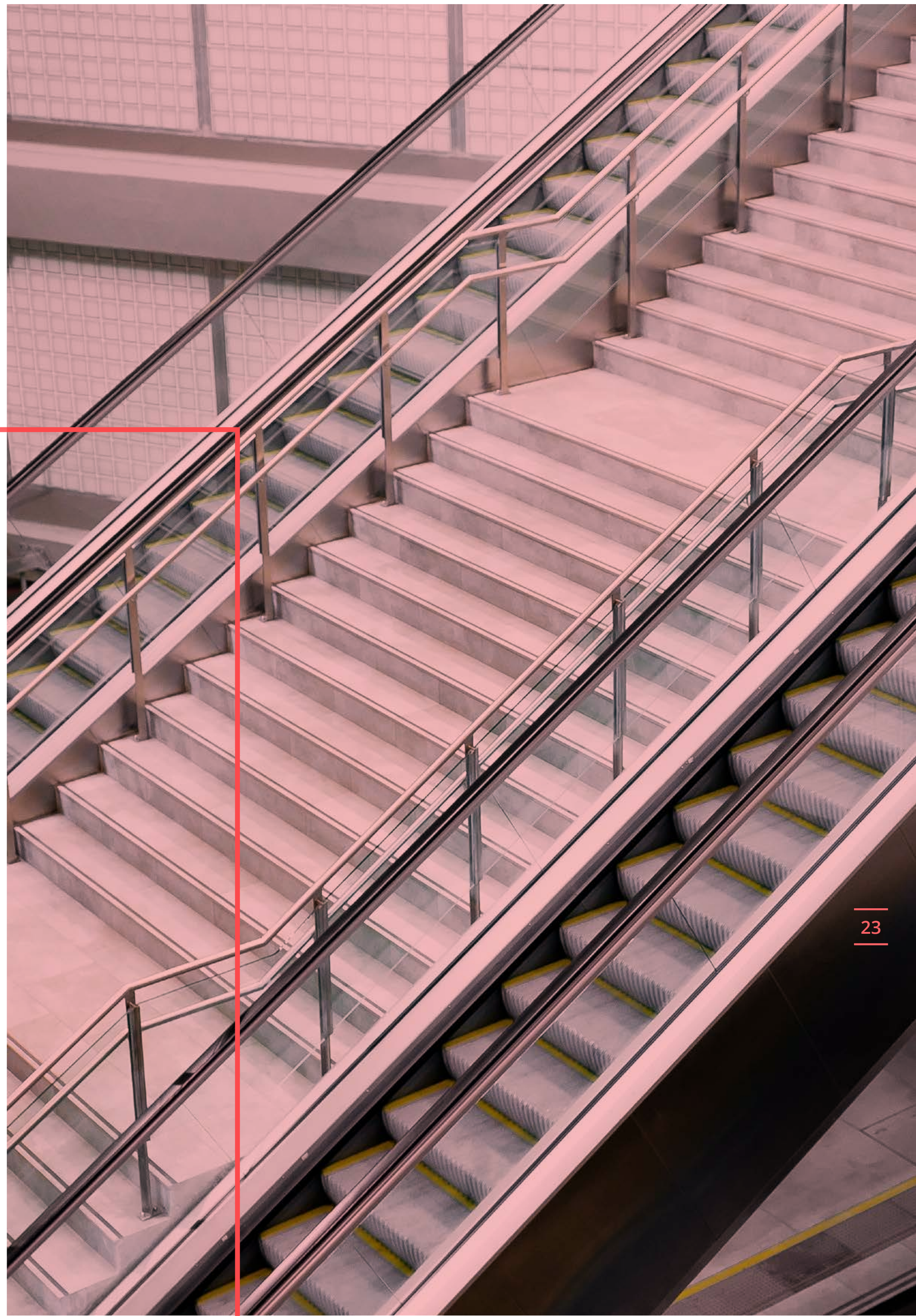
6 YOU DON'T SEE ARCHITECTURAL PRACTICE AS A *TEAM* SPORT



Many architectural practices are sole practitioners. Many are known by the name of their founder. But no architect ever delivered a great building without input from others.

Whether you're a sole practitioner or the principal of a large multi-office practice, you're reliant on a range of players working together to deliver your product successfully. Some of these players may sit inside your practice, while others may be collaborators, consultants or outsourced contributors. Regardless of who they are, their ability to align and function as a high-performing team will be a crucial determinant of your practice's success.

Given the rarity of high-performing teams, creating one can be a compelling point of difference. A high-performing team can overcome all sorts of challenges and consistently generate real innovation, creativity and sustainable business growth. A team's effectiveness will often boil down to one simple thing: Trust. Without it, there can be no permission to fail, no encouragement to challenge the status quo, and no motivation to do better.

Fix:

Getting the practice's leadership to move away from an egocentric, do-as-I-say approach can be challenging. Generally, this can only happen when leader(s) fully commit to a genuine, team-based philosophy. It is virtually impossible for an ego-based leader to drive change – in these instances, an independent business adviser or coach will need to be engaged. >

7 YOU NEVER SAY ‘NO’

As well as building trust within a team, you also need to build trust and belief in yourself. Have you ever said ‘yes’ to a project you really didn’t want? Have you persisted with a client who is not on the same page as you? Have you agreed to a low fee – or no fee at all – just to get the job?

Most architects have done all these things, especially in the early years of their practice. But despite rationalisations – “maybe this project will lead to something more exciting” or “I’m sure the client will change” or “let’s think of this low-fee job as an investment” – learning to trust your intuition and say ‘no’ is an essential milestone on your pathway to success.

Fix:

Develop a clear strategic business plan. Clarify and define your overarching purpose. Build a team culture based on trust, where everyone operates with the same set of core values. A clear understanding of where you are going and how you plan to get there makes all the decision-making far more straightforward and empowers you to say ‘no’ to anything that is not aligned with your direction.

8 YOU CONSIDER YOURSELF AN *EXPERT* RATHER THAN A *FACILITATOR*

As a professional, part of your allure and value lies in your expertise – knowledge and awareness that the client doesn’t have. There was once a time when clients submitted to the view of the expert. But those days are virtually gone.

Business in the 21st century requires an equitable dialogue between customer and professional. A discussion that is based less on how much the professional knows and more on how effectively they can discover the unique aspects of the client’s needs and circumstances, will enable a genuinely creative outcome.

Fix:

Prioritise continuous learning for everyone in your practice. Develop a clear strategy to embed proactive innovation and research into all aspects of your practice’s culture and operations.

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9 YOU DON'T *PLAN* FOR SUCCESS

You wouldn't recommend to a client that they build without a suitable plan. So, it's confounding that so many architects feel comfortable trying to grow their business without a plan. It is ideal to create several different plans, extending from the big picture, strategic aspects of the business (strategic plan, business plan, growth strategy) down to the finer operational details (financial, resources, facilities, marketing).

To move from 'survival' to 'sustainability', it is best to focus on the financial plan and resources plan. Or, in simple terms, the finance budget and time budget. It is essential to set realistic targets based on your knowledge of past performance at both practice and project levels to deliver ongoing success.

Fix:

How do you feel about the client who wants to override your specialist advice and design their own building? How often do you carry out your own structural or mechanical service designs? Business and strategic planning is a specialist skill, so hire a suitably experienced specialist to help you.

10 YOU DON'T TRACK OR MEASURE YOUR *PERFORMANCE*

Without a plan, it's almost impossible to measure performance effectively. This is because you have nothing to measure it against.

I suspect most practices would say they do measure performance. But while basic comparative statistics like the number of new projects, staff, or bank balance are informative, none of these bears any causal relationship to profitability. You could have twice as many projects, or staff, or a higher bank balance, but your business could still be less profitable.

Profit is not the only meaningful measure. Other values include client satisfaction, media coverage of your projects, and staff turnover. The better you perform across all aspects of your business, the closer you will get to success.

Fix:

Establish critical measures relevant to your practice, set appropriate targets, and make sure you have systems in place to capture the performance data you need. Relevant measures might cover financial data (profitability, revenue, cash), staff (time, cost, length of tenure, satisfaction), customers (sources, conversion rates, satisfaction), media and awards coverage, and projects (type, size, value, services offered). Regularly compare actual performance with targets and be sure to take appropriate management action when targets aren't met.

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BREAKING DOWN THESE BARRIERS TO SUCCESS

Practices that have overcome most, or all of these barriers are far more likely to achieve success at levels well beyond basic business sustainability. But it is critical for these highly successful practices to implement the required management actions deliberately and explicitly.

Behavioural and operational guidance is needed for everyone in the practice, to contribute to achieving great outcomes. Ensure that your practice's leadership compiles, shares, and actively reinforces these guidelines with everyone in the business.

So, survival, sustainability or success? Which of these goals is the ceiling for your practice?

How far you can go will depend on how hard, and how smart, you're prepared to work. Successful practitioners will tell you that success is definitely achievable, and absolutely rewarding. —

ROSS CLARK

ROSS CLARK IS THE FOUNDER OF MELBOURNE-BASED BUSINESS COACHING AND ADVISORY SERVICE, WHYWHATHOW. HE STARTED HIS CAREER AS AN ARCHITECT AND HAS MORE THAN THIRTY YEARS' EXPERIENCE IN MENTORING AND COACHING ARCHITECTS AND CREATIVE PROFESSIONALS SO THEY CAN START, INNOVATE, AND GROW HIGHLY SUCCESSFUL PRACTICES.

>> CLICK TO JUMP TO PAGE <<

INTERVIEW WITH MARIA RUIZ PARDO, DIRECTOR AT ATELIER MEL

Traditional Crafts In the Digital Age: Dazzling Artworks by Atelier MEL

ATELIER MEL IS DEVOTED TO THE CREATION OF UNIQUE ARTWORKS AT THE INTERSECTION OF ARTISTRY AND DIGITAL DESIGN TECHNOLOGY. BASED IN SPAIN, MARIA RUIZ PARDO LEADS A TALENTED TEAM OF DIGITAL DESIGNERS, ENGINEERS, ARCHITECTS AND ARTISANS TO COLLABORATE ON INSTALLATIONS SHOWCASING TRADITIONAL ARTISANSHIP AND THE POTENTIAL OF CUTTING EDGE DESIGN AND FABRICATION TOOLS.

In its beginnings, Atelier MEL embarked on a deep study of artisan glass techniques to create a set of modular collections of three dimensional illuminated mosaics. This was the first step towards developing conceptualizing, designing and building customized art pieces in a great variety of different materials.

As pioneers of parametric design, Atelier MEL have created design tools which make it easier to work with interior designers and architects and shorten the process chain that can link a complex art concept to its materialization. This has allowed them to reach new heights of creativity, efficiency, and quality.

Could you tell us a little about your background?

I have an architecture and design background, having completed my studies in architecture in 2008. I worked while in university and continued working as an architect for several years after I graduated, but the economic situation in Spain became very difficult. Despite having a good job, the prospects for growth weren't encouraging.

That was my reason for starting a Master in Architectural Management and Design at IE School of Architecture and Design with a focus on marketing and business administration. The program was targeted at architects and design professionals in order bridge the gap between business and design, and I was enrolled in their founding year. The program was mainly online and partially in Madrid and one month in London. It was a good opportunity to meet professionals from all around the world. There were fellow students from the US, Mexico, Spain and Germany

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which I found really enriching. Before the Masters program, I really lacked business knowledge because we weren't taught anything about business in architecture school. In business school, I learned how some of the architecture studios I had worked for were run inefficiently, and I would talk with a very good friend about doing something together someday. That was the start of Atelier MEL, almost five years ago already.

Were you always interested in creating an architectural product? Are you still practicing traditional architecture next to running your own company?

» I never really made a conscious decision to create an architectural product, but I was always more interested in small-scale projects mainly because of the speed.

MARIA RUIZ PARDO

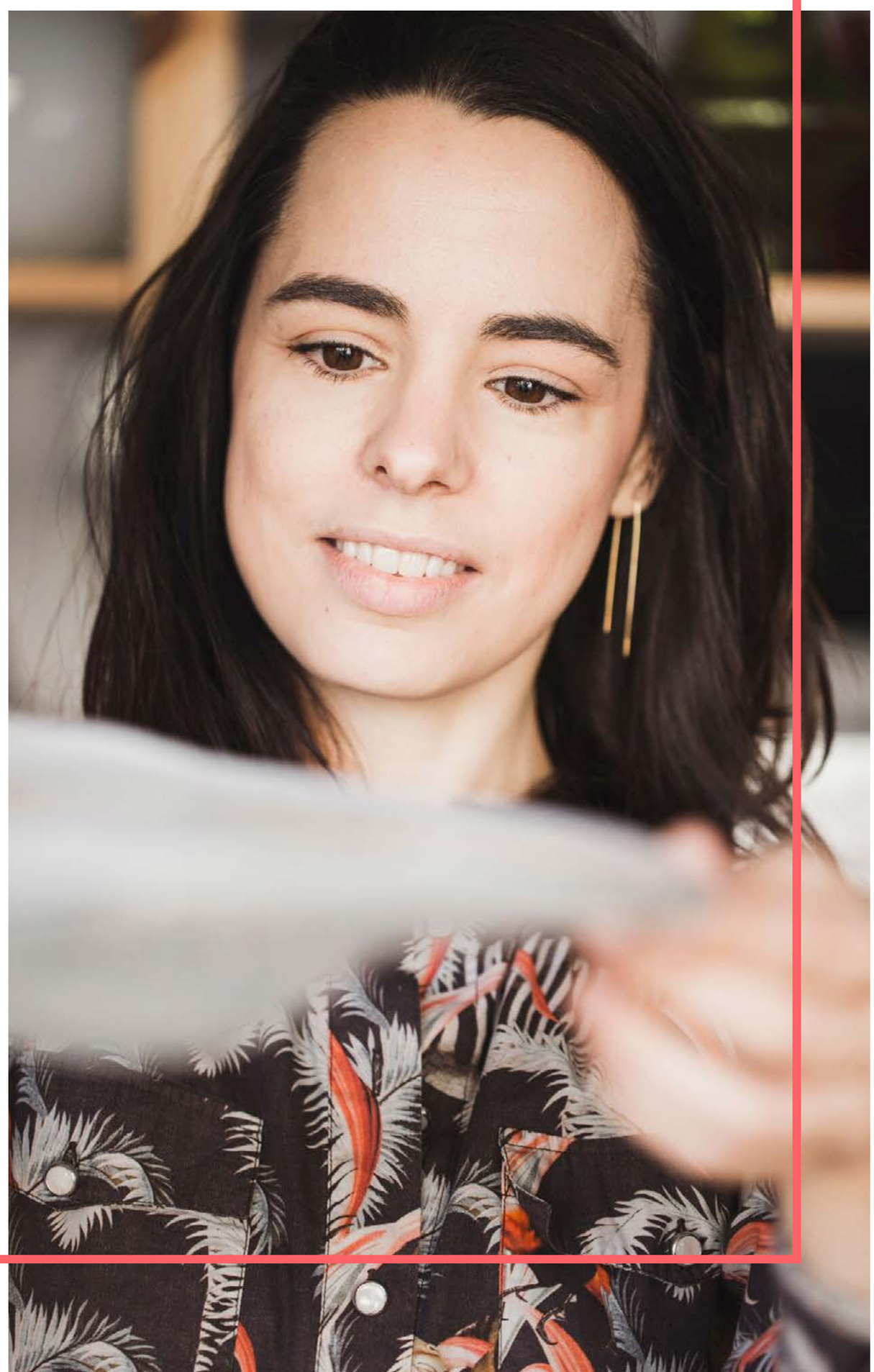
DIRECTOR AT ATELIER MEL

AFTER EARNING HER ARCHITECTURE DEGREE IN BARCELONA, MARIA RUIZ PARDO PRACTICED IN SPANISH STUDIOS FOR SEVERAL YEARS BEFORE PIVOTING TO PURSUE A CAREER IN PRODUCT DESIGN AND BUSINESS MANAGEMENT.

AFTER EARNING A MASTER IN ARCHITECTURAL MANAGEMENT AND DESIGN AT IE SCHOOL OF ARCHITECTURE AND DESIGN IN MADRID AND RCA IN LONDON, MARIA FOUNDED ATELIER MEL IN 2013 WHERE SHE WORKS AS DIRECTOR AND LEAD DESIGNER.

AT ATELIER MEL, MARIA HAS ASSEMBLED A MULTIDISCIPLINARY TEAM OF DESIGN PROFESSIONALS WHO WORK AT THE INTERSECTION OF ARTISTRY AND DIGITAL DESIGN TECHNOLOGY TO CREATE EXCLUSIVE ART INSTALLATIONS.

BASED IN BARCELONA AND CARTAGENA, ATELIER MEL ARE NOW DEVELOPING PROJECTS WHICH JUXTAPOSE CUTTING-EDGE DESIGN TOOLS WITH A RICH UNDERSTANDING OF TRADITIONAL CRAFTSMANSHIP WORLDWIDE.



When I worked for architecture offices on huge projects like hospitals or high-rise buildings, I rarely saw a project from start to finish because the duration of the project cycles was so long. Since I preferred small-scale projects, and I was also really interested in lighting when I was working as an architect, the transition into this field of products felt natural.

Geometry and architectural drawing were also my favorite subjects in university, and these are essential skills for product design. Product design typically involves working with much more complex shapes than architecture, and it can train your brain geometrically, which I really enjoy.

How did you come up with the idea of creating artistic glass lighting modules and create the company Atelier MEL from this?

I was always working on the design side of architecture, and I had a really good friend with a consulting company for architects and engineers. We often talked about the idea of working together, but I always felt I needed to work closly to the design itself, not as an consultant.

One day, we saw an opportunity. One of our mutual friends owns a glass workshop in Cartagena. We visited and saw skilled glass artisans who were our age working in a very traditional craft in the traditional way. They were repeating what their great grandfathers had been doing for decades. They weren't innovating and they were struggling to sell the products they produced.

Roberto, my friend, had a company specializing in high-end technologies of digital production and parametric design. Seeing these glass craftspeople who are really well trained but struggled with their product and market fit, as a designer I felt uniquely positioned with the ability to connect technology with craft. Since I am really interested in crafts and also working in small scale, Roberto and I saw an opportunity to work together with the skills and experience of his company.

The idea was to combine these two things together, with me as designer and manager working together with Roberto's team. We said, "Let's try it, let's get crazy," because it was a really crazy idea. We literally had no experience in the product design process and no experience at all in lighting design, as well as very little experience in glass craft, but that was a thing we could learn from our friends.

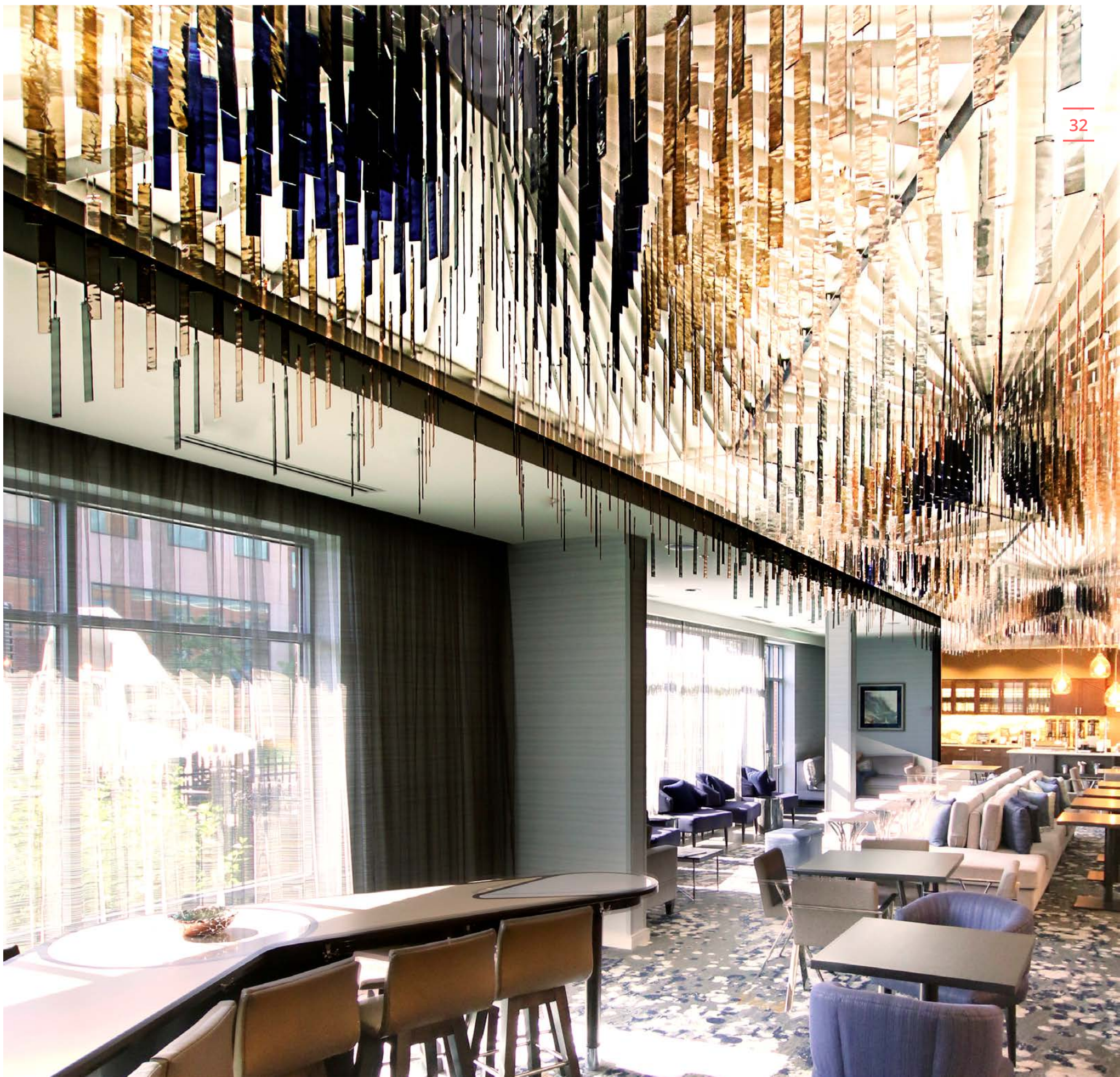
This is how we founded Atelier MEL. Today, we produce a wide range of products and sculptures made of glass and other materials. We recently introduced dynamic lighting, which enables us to do dynamic lightning installations.

That is very inspiring. Can you tell us more about the process of creating your first glass product from scratch? What steps did you take?

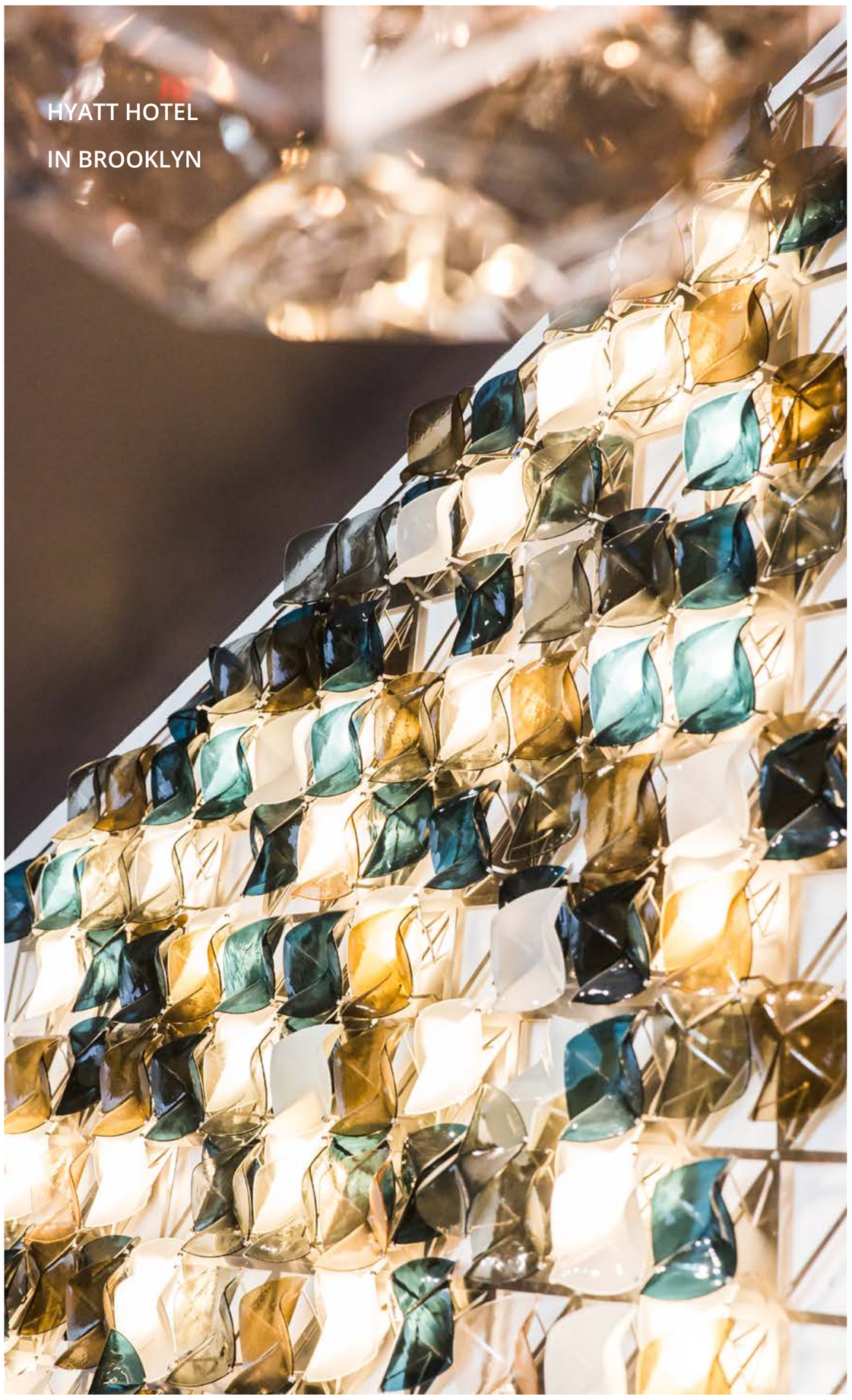
In the beginning we traveled to the workshop in Cartagena. This was in the second week after our first brainstorming session. I had read a bit about glass production techniques before and when I arrived there, I started asking the craftsmen “How do you do this?” and “How do you do that?” The craftsmen recently confessed that they thought that I was crazy, wondering “Why does this woman want to know all these things?”

I wanted to learn what we were able to do with the material. We knew from the beginning that we had to target the high-end market with our glass products, since glass is an expensive material

I WANTED TO LEARN WHAT WE WERE ABLE TO DO WITH THE MATERIAL... I WANTED TO UNDERSTAND ITS POTENTIAL.



HILTON HOTEL
PROJECT IN BOSTON
BY ATELIER MEL



which is hard to produce at a low cost due to the hand-made fabrication process. I wanted to understand its potential.

From the outset our idea was to produce something modular, like a jigsaw puzzle, that each architect or interior designer could adapt to their project. We started designing and prototyping and we launched two modular collections called DUNA and LOTO. The DUNA system is composed by softly curved rounded glass pieces assembled following a triangular pattern. The LOTO system is composed by flower-shaped glass pieces assembled on a square grid.

We were really lucky that the first products were successful quite early, which allowed us to continue pursuing new products and projects. Today we have built up a portfolio of many different products.

How did you go about finding clients at first?

The first thing we did was that we subscribed to a design competition for young designers of “Maison et Objet”, the large trade show in Paris. It was not a win-or-lose competition, but young designers could be selected for a free fair stand at the show, and we were selected with our first DUNA and LOTO designs. We got a fair space at the young designer’s corner which was sponsored by the trade show itself, and we displayed our first product selection and showed our work which got us some attention.

Looking back, the young designer’s corner was not the best place for us to exhibit, because we have a high-end product and didn’t reach our target audience there. We should have been in the luxury section of the fair, but of course we couldn’t afford this at that time.

During this time Roberto, my business partner, was already working with consultant clients in Doha, Qatar. He had some knowledge about the market, which is open to very exclusive

products. That is way we developed a strategy to target the middle east market with our first products.

I also started to travel to the Middle East, without knowing anyone, knocking on doors and presenting our first designs. At some point I got to know the owners of a famous shop for modern furniture in Doha. They were interested and bought a LOTO installation. That was our first sale.

Who are your target customers today and what projects are you working on mainly?

The hospitality industry is our core market. We do a lot of work for exclusive hotels, like four and five-star hotels and also for restaurants. We also work for private clients with residential projects a lot.

Retail shops are a growing field, too. Lately, we have done quite a lot of work for company headquarters, like an installation for a pharmaceutic company headquarter in India or another lightning installation for a new bank in Qatar.

Each of our light installations is unique since the cost of the designs are quite high.

How did you develop your acquisition strategy and process? What have been the challenges and how do you reach your target customers today?

In the beginning we started replicating the sales approach of Roberto's consulting business: literally going door-to-door visiting clients and presenting our products to them. But that turned out not to be very successful because our clients are spread around the world. Since our installations are quite exclusive, the decision process is typically long and clients are usually not repeat customers within a short time span. Clients won't buy one piece per month — they might buy one piece per year — so we need a lot of clients to keep the business running.

TODAY, WE ACQUIRE MOST OF OUR CLIENTS FROM SOCIAL NETWORKS LIKE PINTEREST AND INSTAGRAM

At one point, almost by chance, we were getting published in the press by the American Interior Design magazine. This was a huge boost for our success in the in the US. We had never travelled to the US for sales before that article, but we sold ten projects from that single article. That was a lucky break and it opened the US market for us, which nowadays is our most successful market.

Today, we acquire most of our clients from social networks like Pinterest and Instagram. We have an in-house team member dedicated to social media marketing and social networks. 90% of the time we are contacted by architects, interior architects or designers who discover our work through these channels and who want to implement our products into their projects. They will specify our product or recommend us to their clients, but then we wait until the day the construction is finished because our product is the last piece to be bought and installed. This time gap is very long, and for a young company with a small team it can be very difficult to manage this from a cash-flow perspective.

That is why we have started to work with art consultants recently. This isn’t a common job profile in Spain at all, but it is quite

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RESTAURANT
MADRID

popular in the United States and in China, and it is becoming more common in the Middle East and in the UK. It benefits us to connect with art consultants because they are typically involved only in the last phase of construction for a project. An art consultant would receive concepts from interior designers and look for artists, firms or products to realize these concepts.

This is ideal for us, because we love the challenge of turning concepts into a real object. Since we have a modular product collection, we are able to solve complex shapes and geometries. We are able to offer a very wide variety of options in a very short time.

These skills are not so common among interior designers; perhaps it's a little bit more with architects. Interior designers usually struggle to work with complex shapes, so we partner with help them to improve the concept. It is a win-win relationship because we enjoy that process and they are very happy to have our help elevating their concept and bringing it to life.

How much does an Atelier MEL installation usually cost?

A small installation usually starts at €3,000. The most expensive installation we have ever sold was around €300,000. This was a huge installation for a big hotel.

What is your future plan with Atelier MEL. How would you like to develop the company?

Since we are all designers and architects, we are likely to focus on the design and service side of our business. We cannot be so competitive on the production side, because we are a new firm and there are huge competitors in the lamp and furniture market. Our whole fabrication process is carried out in Spain currently.

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We are at a point where we could choose to develop the venture more into a product company or more into a service company, and we find it more comfortable to strengthen our profile as a service company. That is why we are focusing more on doing unique artworks and installations of any type since this is our core strength. We call this section of our business “Bespoke Designs” as you can see on our website. The projects are usually large and unique. They are a lot of fun because it’s always a new challenge which we start from scratch. We do a wide variety of different projects within this field.

The second part of our company is called the Modular Collection. These are modular glass products which are already pre-designed and can be produced in a couple of weeks. If we wanted to grow our business on the Modular Collection side, we would need to build a factory with our own production. A factory could speed up the production process and would also let us store material, but considerable investment would be required to build this into a holistic product company.

It is leaner for us to develop our service arm and outsource production. However, we are starting to talk to potential partners like large lighting companies who could take our modular collection into production. Our clients would then be able to use the digital composer to design their own shapes, select colors and their location and place an order. We think this could work well with the right partners, but you never know, perhaps in a couple of years we will manage the production ourselves. For now, we are focusing on the service side.

Do you have any advice for Archipreneurs who are interested in starting their own company in the built environment?

Oftentimes we limit ourselves. Try to develop an attitude of thinking and believing that when you are brave, and you persevere, you can reach much further than what you would initially expect. Surround yourself with those who complement you and those who can help make a project grow. The team is much more important than the idea, as the team is who is going to do the difficult part of implementing the idea.

SURROUND YOURSELF WITH THOSE WHO COMPLEMENT YOU AND THOSE WHO CAN HELP MAKE A PROJECT GROW. THE TEAM IS MUCH MORE IMPORTANT THAN THE IDEA

In the beginning of our start-up I really trusted my friend when he encouraged me to start this venture with him. I couldn’t imagine that we would find clients in Doha without knowing anybody there. I thought this was >

impossible, but now we are in Doha, and we have even sold a lamp to the queen, the Sheikh. Nothing is impossible. Be brave.

What are your thoughts on the future of the built environment? How can it improve, and what continues to inspire you?

I would say is that the future is absolutely based on technology. We should all embrace it and start changing our brains to be much more parametric, much more systematized, much more efficient. In the beginning of my career I was the typical architect, much more interested on the design side of architecture than on the technical side of architecture. By working together with this team of consultants, I really learned how powerful you can become as a designer mastering the use of technology. Before I considered design and technology as two different things, but now I see how powerful they are in combination. —

SLEEPERZ SCOTLAND

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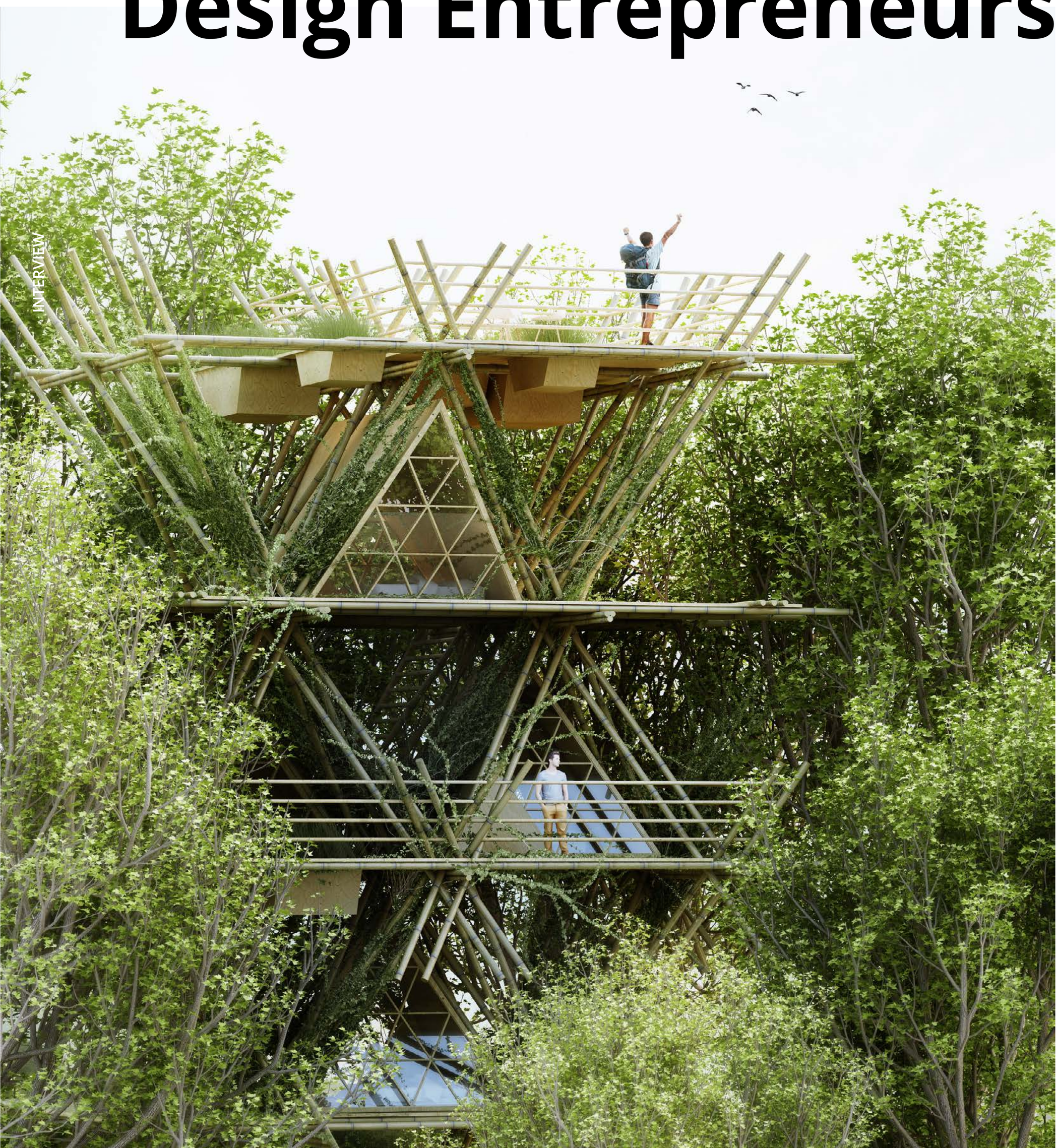
INTERVIEW WITH CHRIS PRECHT, ARCHITECT & FOUNDER

Transforming Practice: Chris Precht Represents a New Generation of Design Entrepreneurs



ONE WITH THE BIRDS

VISIONARY YOUNG ARCHITECT CHRIS PRECHT SHARES HIS THOUGHTS ON THE SHORTCOMINGS AND OPPORTUNITIES OF ARCHITECTURE TO HELP HUMANS CONNECT WITH NATURE AND COMBAT CLIMATE CHANGE, INSULAR THINKING AND CONSUMERISM BY ENGAGING WITH THE REAL WORLD. IN THE AGE OF INSTAGRAM, PRECHT VALUES AUTHENTICITY, COLLABORATION AND EMPATHY AS GUIDING PRINCIPLES TO CREATE GOOD BUILDINGS AND INSPIRE OTHERS TO DO THE SAME.

The last time we spoke, you were based in Beijing, China. Since then you have built your own studio in the mountains of Austria. What inspired this change?

Yes, quite a lot has changed. Before we were surrounded by skyscrapers – now we are surrounded by mountains. The short answer is, I relocated because I get distracted in the city, and I find it's easier for me to focus on my work in a studio far off the grid. But that is also a bit of a superficial answer…

What's the long one?

I've been thinking a lot about this question recently. I think it starts with my dad. He was an extreme free-climber: no ropes, no security, just him and the mountain. He had a very direct connection to our natural environment. The more I climb and hike, I feel that my dad's determination to climb is similar to my determination to be an architect.

My dad was always fascinated by how small he felt at the bottom of the mountain and how humble he feels on top of it. It is a change of perspective. You become insignificant and surrounded by millions of years of evolution. You become part of a larger story. The same is true for architecture. It can become this transmitter of history and culture and this can create something long-lasting in times that are driven by nearsightedness and short attention spans. As architects, sometimes we need this change of perspective.

When my dad fell from the mountain and died three years ago, some said that my dad had achieve the creation of his own

universe, his own reality far away from the real world. However, when I go to the mountains, I feel there is nothing more real than being up there. You with all your emotions and senses, with your fear, your joy, your strength and your weaknesses. And you are with nature, with all its beauty and danger. I don't think that my dad created his own reality, distant from our reality in the cities. I think he was as close to an objective reality as possible. This direct connection to our environment is more 'real' to me than what we consider to be 'the real world' with our invented stories of consumption, consumerism and capitalism.

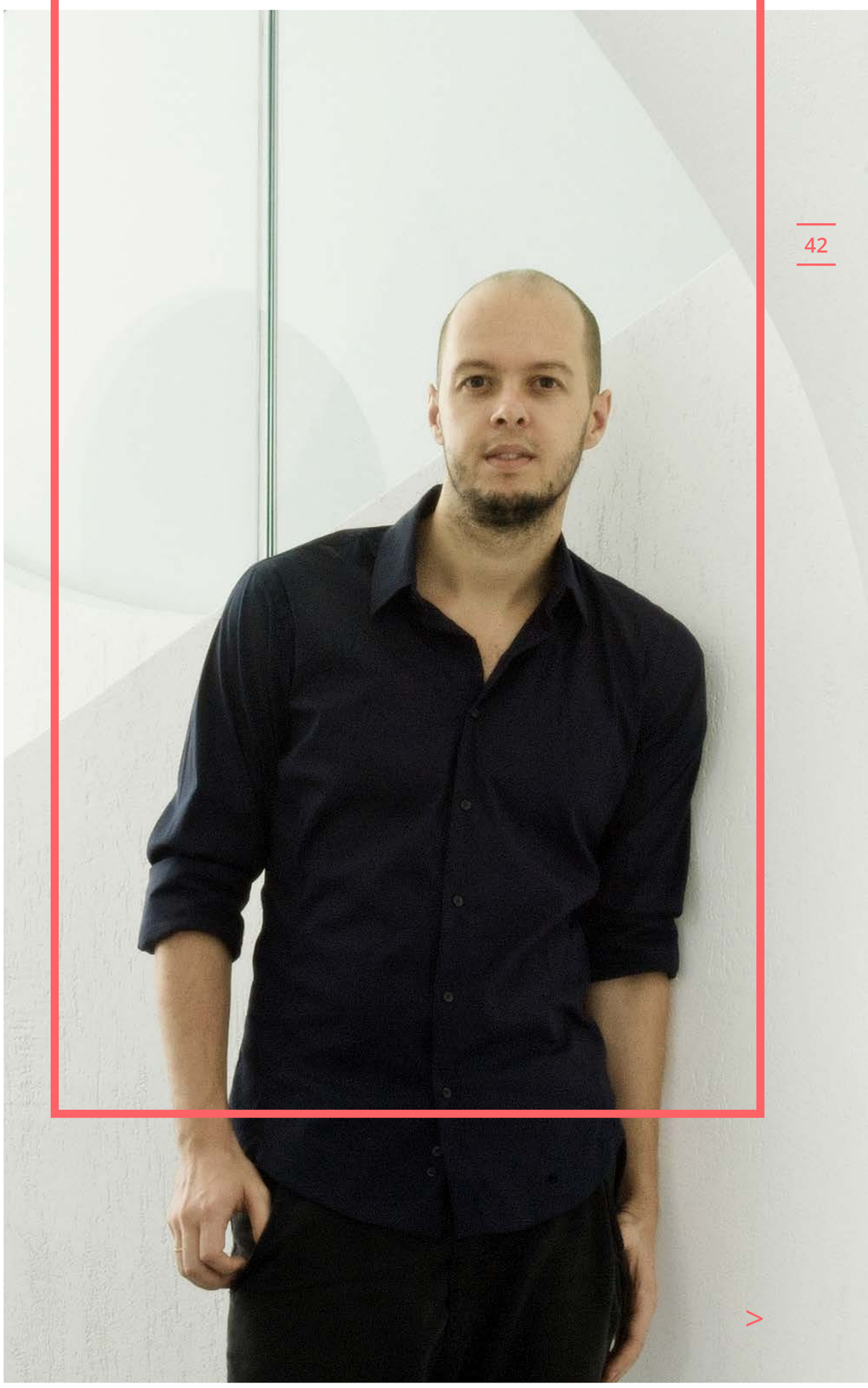
Yuval Harari wrote in his books that our being and doing is shaped by fictional stories that we invented, which only exist because we all agree on them. Stories like money. A dollar bill is in the eyes of a chimpanzee a worthless piece of paper. Further stories are political systems, the economy, religions or nations. Our lives were shaped by those stories.

The same is true for architecture. For most of history, those stories shaped our buildings. We built pyramids for gods, churches for religions, palaces for kings. We built in different architectural styles for different eras, for different political systems. Now we mainly build skyscrapers for the economic system. We mainly build expansive real estate. Architecture was shaped by those stories. We care about those stories, but our planet doesn't.

CHRIS PRECHT

FOUNDER OF STUDIO PRECHT & PENDA

CHRIS IS A YOUNG ARCHITECT FROM AUSTRIA AND FOUNDER OF PENDA AND STUDIO PRECHT. TOGETHER WITH HIS WIFE FEI, HIS TEAM AND 2 CATS, HE IS WORKING FROM A REMOTE PLACE IN THE MOUNTAINS OF SALZBURG. FROM THERE, THEY ARE WORKING ON PROJECTS WORLDWIDE, WHICH RANGE FROM ECOLOGICAL HIGH-RISES TO BAMBOO-BUILDINGS. CHRIS IS AN ADVOCATE FOR A NEW GENERATION OF ARCHITECTS THAT FINDS MEANING IN THEIR WORK AND THAT IS A LEADING VOICE TO DESIGN AN ECOLOGICAL FUTURE.



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The countryside connects me more to an objective reality. For example, growing and harvesting my own food reconnects me to my senses. This is something I really missed in Beijing: to breathe in nature, to taste self-grown vegetables and to touch haptic materials. I would like to base my work as close to this reality as possible. How can architecture increase the health of people? Do we find strategies to build without harming other species or the environment? How can buildings give something back instead of just consuming from their environment? How can buildings reconnect people with their senses?

I think those are important topics of the future. If we lose our connection to our environment, we won't be able to solve the problem of our generation: climate change.

Are you still working with Penda or do you pursue your own practice from your new studio now?

Yeah, we relocated our studio to the Austrian mountains two years ago and we rebranded our studio as 'Precht' at that time, for a couple of reasons. The main reason was that I wanted to work closer with my wife. Projects from the last couple of years like the Toronto Tree Tower, the Tel Aviv Arcades or the Indian Projects were already done by Fei and me. However, Fei wasn't a partner of Penda and it was about time that she gets a proper recognition. Another reason is that we are working on the countryside and authenticity is here very important. It makes a difference if you stand with your name for your projects or with an invented synonym. So there are a couple of reasons, but we are very excited about the path ahead and all the feedback we are getting.

HILTON HYDERABAD

You represent a new generation of aspiring young architects. What are your thoughts on the future of our profession? How do you think we need to change and be ready for the future?

We live in uncertain, fast changing times. What will artificial intelligence and machine learning do to architecture? Or does it something for architecture? No one knows what the future of architecture holds, but I will put forward two possible scenarios, one optimistic and one pessimistic.

Optimistically, we will introduce nature back into our buildings and connect residents with their senses. There will be sensible architecture with materials that you want to touch, with plants that you can smell and eat, and birds and bees that you can hear. Buildings will be healthy for the residents and for the environment. There will be buildings that people care about and get inspired from. We will find a way to reinvent the building industry and our sector will detach from the notion of economic growth and our towers will become more than vast real estate.

TORONTO TREE TOWER

A more negative path could be that architecture will be based on fictional stories, but it won't be a political system or the capital market. The currency of the future is not Dollars, Euros or Renmimbi. The currency of the future is data, and architecture won't be an exception. If that is the path, the capital for buildings won't be money any more, it will be data, and the developers won't be Soho, a fund or an investment group. The developer of the future will be called Google or Amazon, and the architects will no longer be Rem or Bjarke, they will be called Apple, Baidu, or whatever comes after those tech giants.

I am neither an optimist nor a pessimist. I am a possibilist and I am excited to be a young architect in our time. The challenges that are ahead of our generation are enormous, but so are the possibilities. In the end, it is up to us to determine the future we want to shape.

What are your further thoughts on technology and architecture? Around the world, venture capitalists are excited to disrupt the built environment. What are your thoughts about that as a young architect working and living in times of change?

The question is whether the change is coming from within our industry or from the outside. At the moment I see our architecture too occupied with ourselves to change anything. We are still driven by intellectual, theoretic and academic statements, but there are more urgent problems than form and styles. As we remain distracted, most likely the change will come from the outside, but maybe that wouldn't be as negative as I previously described. In recent years, the tech companies have revolutionized other sectors that were highly insufficient, such as the mobility and transport industry. For years, innovation in that sector stagnated and it needed Uber, Hyperloop, Tesla and Google to bring change. On one hand there is a lot of place for innovation, on the other hand there is possibilities to collect data and make a profit. This is true to architecture. Our sector is insufficient and there is a huge potential of innovation and profit.

IN MY MIND, TWO THINGS ARE CERTAIN: THE BUSINESS MODEL OF ARCHITECTURE WILL CHANGE AND THE ARCHITECTURAL BUBBLE WILL BURST WIDE OPEN.

Perhaps investors and large technology companies will use their collaborative resources to create the most coherent and sustainable buildings systems. Perhaps they will use their greed to collect data in exchange of cheaper real estate.

It’s very hard to predict. In my mind, two things are certain: The business model of architecture will change and the architectural bubble will burst wide open.

At the ASA Forum Bangkok you said that the era of the Star Architect is over. Could you elaborate on that?

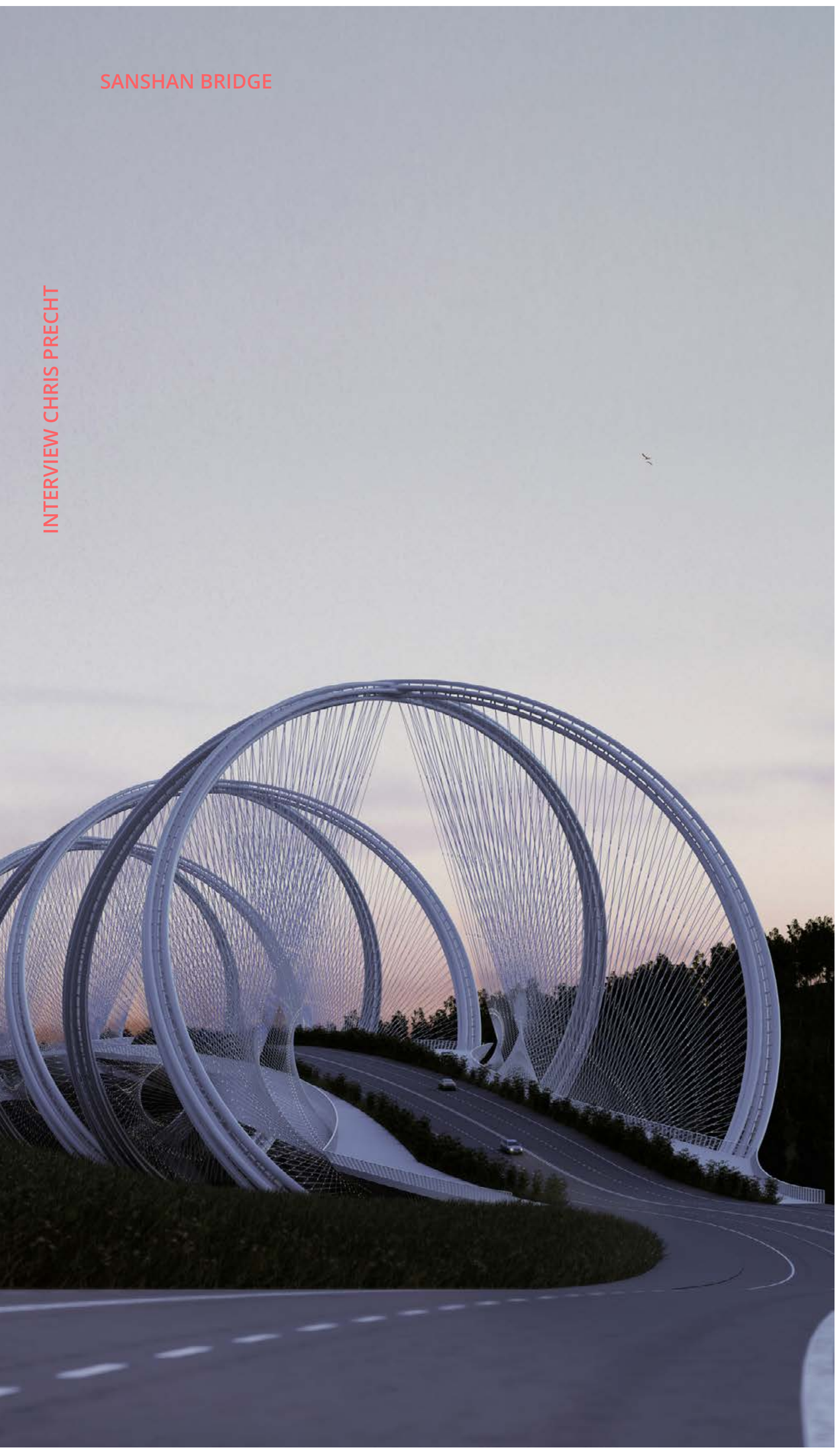
There will still be famous names in architecture, but I think the era of the ego is over. The era of the Vitruvian man is over. The celebration of the individual will be replaced by the power of collaboration. I am inspired how Danish architects are working on collaborative projects. From the outside it looks like couple of bands who are jamming together from time to time. I think that is a path to a future.

I used to do ski-jumping and I have to say that in sports there is less competition than in architecture. There is a lot of elitism and egoism and I hope that a new generation of architects will find ways to work together, learn from each other and lift the quality of our industry.

You are very active on social media and you have built a personal brand among young architects. Is social media also a channel to attract projects for you?

As an architect I have two goals: Create good buildings and inspire others to do so. I use Instagram mainly for the second goal.

Being active on social media certainly creates opportunities, but it takes calls and meetings to establish trust. A project will never happen without trust. Similar to a dating app, social media might get you in contact, but getting married requires more effort.

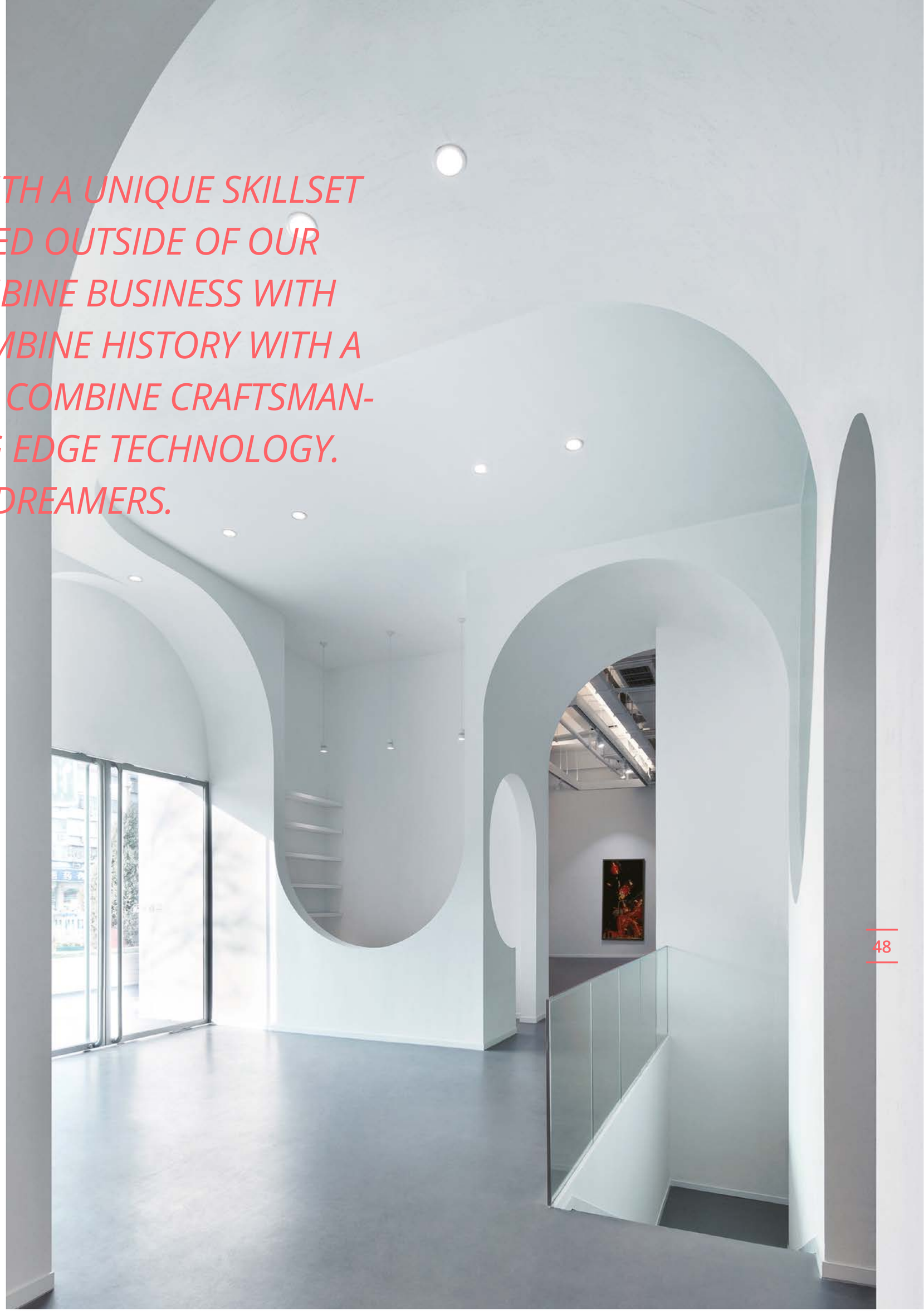


Social media does something else to our projects: it's now very common for clients to ask us to design an "Instagramable spot". They want one shot that will make the project viral. That's an interesting part of the brief and I am not sure if that is a particular request for my studio since I'm active on Instagram and they think I have a clue about viral marketing of spaces. I don't know, but I find it interesting. One can say it's superficial, but maybe it adds another dimension to the design, because it lets you also think in stories.

You also just started a food startup based in Tel Aviv and Toronto. Could you tell us more about that? What inspires you to look into the startup world?

The startup culture is a beautiful part of our time. The playing field for creativity is wide open. You don't need to study architecture to be an architect and you don't need to work as an architect after studying architecture.

WE ARE TRAINED WITH A UNIQUE SKILLSET THAT IS ALSO NEEDED OUTSIDE OF OUR INDUSTRY. WE COMBINE BUSINESS WITH CREATIVITY. WE COMBINE HISTORY WITH A FUTURE VISION. WE COMBINE CRAFTSMAN-SHIP WITH CUTTING EDGE TECHNOLOGY. WE ARE STRATEGIC DREAMERS.



CONTEMPORARY ART MUSEUM

We are trained with a unique skillset that is also needed outside of our industry. We combine business with creativity. We combine history with a future vision. We combine craftsmanship with cutting edge technology. We are strategic dreamers.

I try to make use of this skillset and combine it with opportunities of our time. With that in mind, I'm part of a couple of startups like Halvana (a sesame seed business), Tmber (a startup for wood distribution) and Baumbau (a startup for prefabricated structures).

As much as I am in love with architecture, the business side of it is horrible, so I try to stand on a couple of more legs to create a stable future.

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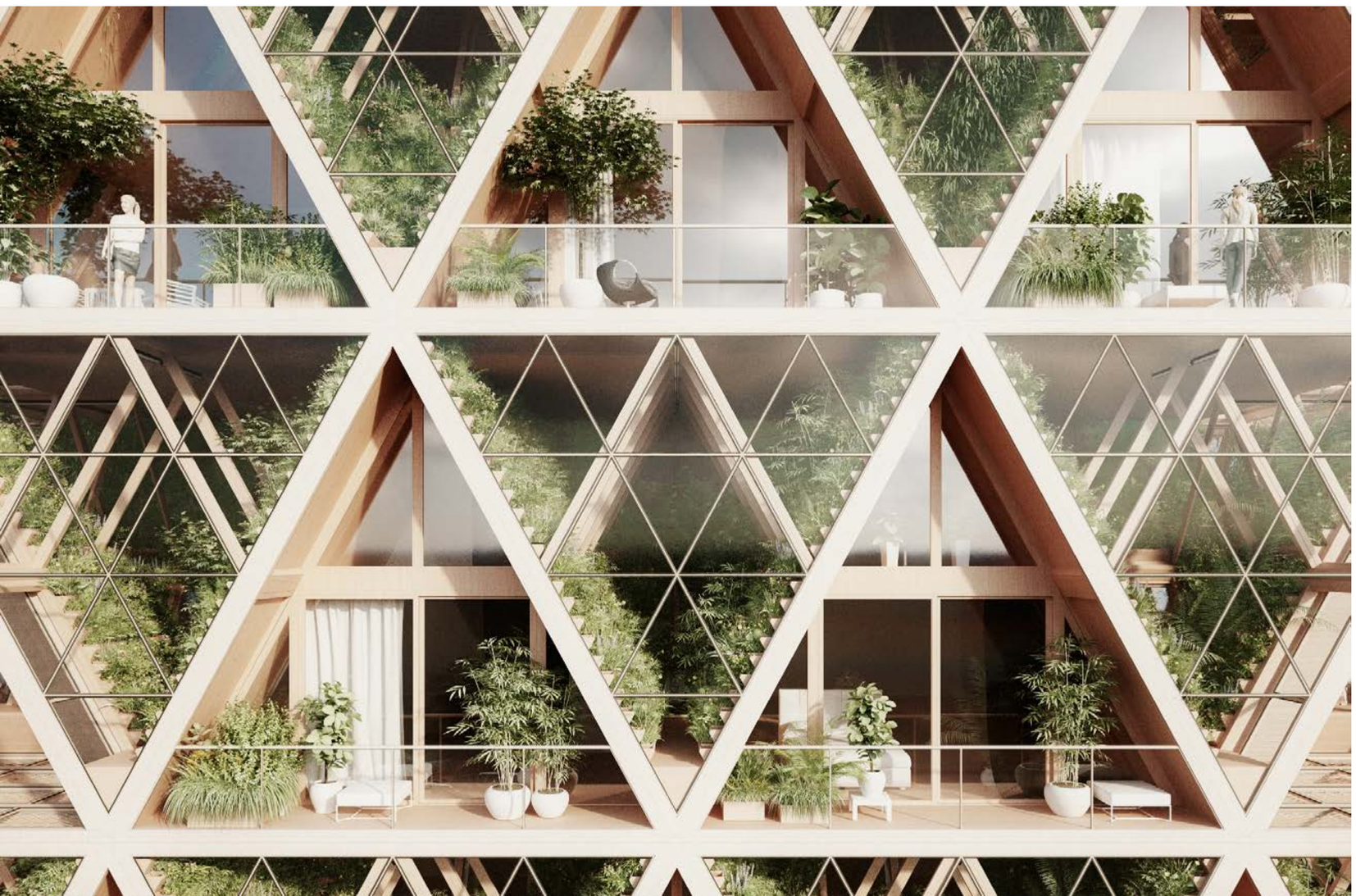
THE CHALLENGES THAT ARE AHEAD OF OUR GENERATION ARE ENORMOUS, BUT SO ARE THE POSSIBILITIES. IN THE END, IT IS UP TO US TO DETERMINE THE FUTURE WE WANT TO SHAPE.

FARMHOUSE



What are the bad parts of the architectural business?

As Koolhaas put it, “We are in the business of uniqueness” I think that’s a pretty stupid business model. We create always a unique prototype, but we never ship. Architecture is not scalable. If you design a small house, you need two architects on your team. If you get an airport, you hire 30 architects, but your margin stays the same. This is unlike other creative industries like product design, where if you design a chair and you can sell it a million times and have a scalable business.

AS KOOLHAAS PUT IT, “WE ARE IN THE BUSINESS OF UNIQUENESS” I THINK THAT’S A PRETTY STUPID BUSINESS MODEL.


BOULDER HOUSES

What are your thoughts on the future of the built environment? How can it improve, and what continues to inspire you?

I am now a five-year-old architect. An architectural toddler. As a toddler, I ask a lot of questions about our profession and try to find some alternative answers for the status quo. How did we end up with a building system that is highly insufficient, inefficient, damaging and harmful for us, other species and the environment? At the same time, less than 5% of buildings today involve an architect. Did 95% stop listening while we were busy talking to ourselves? Do we have the wrong message?

I think architects can have an important message for the problems of our time. The biggest one for our generation is climate change.

But for that, we need to get our message straight. Does the world really need another glass-tower filled with ACs? The international style of a concrete structure and curtain wall killed thousands of years of building intelligence, and it makes our cities look undistinguishable. The urban fabric dies in conformism.

Maybe we have to look back to build in a location appropriate way: culturally and climatically specific. Climate change won't be solved with new technology. It will be solved with empathy, and architecture has a lot to offer here. We should try to create buildings that connect us to nature. and to our senses. Because if buildings isolate us from our environment, we become numb to it, and if we become numb, we won't be able to solve anything.

What continues to inspire me? Well, I am a toddler. I am naturally inspired. Wherever I look I see excitement and possibilities. If I wouldn't be inspired as a young architect, how could I ever keep up my passion. I believe the best time for me comes in my 60s and 70s. Everything until then is learning. —

CLIMATE CHANGE WON'T BE SOLVED WITH NEW TECHNOLOGY. IT WILL BE SOLVED WITH EMPATHY, AND ARCHITECTURE HAS A LOT TO OFFER HERE.

>> CLICK TO JUMP TO PAGE <<

A Laboratory for Design: LAVA's Research-Based Approach for Building Innovation

INTERVIEW WITH TOBIAS WALLISSER & ALEXANDER RIECK, CO-FOUNDERS AND DIRECTORS OF LAVA

GREEN CLIMATE FUND

LAVA (LABORATORY FOR VISIONARY ARCHITECTURE) CO-FOUNDERS TOBIAS WALLISSER AND ALEXANDER RIECK OF BERLIN AND STUTTGART DESCRIBE THEIR UNIQUE, RESEARCH-BASED APPROACH TO ARCHITECTURAL DESIGN, SHARE ADVICE ON THE IMPLEMENTATION OF NEW TECHNOLOGIES IN TO PRACTICE AND PREDICTIONS FOR THE FUTURE OF ARCHITECTURE.

The office name LAVA contains the word “Laboratory“. How do you span the conceptual link between architecture and research and what does it mean for you?

Tobias Wallisser: Architecture has always held a position between art and technology. Moreover, art and technology share the common ground of working in experimental ways. That is exactly what we wanted to stress by including the word “laboratory” in the name of our architectural practice. Deliberately we did not include our initials but wanted to stress that we cultivate different ways of working together. In the end this also leads to fresh ways of generating projects.

Experiments are something we are very much interested in. We are equally dedicated to research just as we fulfill our clients’ needs and demands. For us, architecture is a wide ranging discipline that actively contributes to answering contemporary questions and concerns. In other words, our practice is a laboratory that conducts experiments with a very defined input and a clear research agenda.

Alexander Rieck: As a researcher in a lab you always have a clearly defined approach of analysis – assessing variations, finding conclusions and conducting the research to a final result. It is never linear but consists of parallel informed processes. That is similar to our design approach. By using different digital tools we are able to synchronize different design approaches in order to find the most ideal one.

Besides that, when entering one of our offices you are likely to encounter numerous experiments we are doing to improve our projects further. We love to do mock-ups and build prototypes ourselves in order to learn more about the process, the technology and its application.

LAVA

AWARD WINNING INTERNATIONAL PRACTICE LAVA WAS FOUNDED IN 2007 BY DIRECTORS, CHRIS BOSSE, TOBIAS WALLISSER AND ALEXANDER RIECK AND WAS THE 2016 EUROPEAN ARCHITECTURE LAUREATE. LAVA COMBINES DIGITAL WORKFLOW, NATURE'S STRUCTURAL PRINCIPLES AND THE LATEST DIGITAL FABRICATION TECHNOLOGIES TO BUILD MORE WITH LESS: MORE (ARCHITECTURE) WITH LESS (MATERIAL/ENERGY/TIME/COST). CURRENTLY, 50 ARCHITECTS WORK FROM THREE LOCATIONS ON PROJECTS WORLDWIDE.

CHRIS BOSSE
DIRECTOR

CHRIS BOSSE HEADS LAVA ASIA PACIFIC AND IS BASED IN SYDNEY WHERE HE IS ADJUNCT PROFESSOR AT THE UNIVERSITY OF TECHNOLOGY, SYDNEY. EDUCATED IN GERMANY AND SWITZERLAND, HE WORKED WITH SEVERAL HIGH-PROFILE EUROPEAN ARCHITECTS BEFORE MOVING TO SYDNEY. WHILST ASSOCIATE ARCHITECT AT PTW ARCHITECTS IN SYDNEY HE COMPLETED MANY PROJECTS IN ASIA AND THE MIDDLE EAST. HIS WORK ON THE WATERCUBE OLYMPIC SWIMMING CENTRE IN BEIJING RECEIVED THE ATMOSPHERE AWARD AT THE 9TH VENICE ARCHITECTURE BIENNALE; AND HE WON AN EMERGING ARCHITECT AWARD FROM RIBA IN 2008 LONDON AND A 40 UNDER 40 AWARD IN 2012 AND AUSTRALIAN DESIGN HONOUR AT THE AUSTRALIAN DESIGN CENTRE IN SYDNEY IN 2015.

ALEXANDER RIECK
DIRECTOR

ALEXANDER RIECK IS BASED IN STUTTGART WHERE HE WORKS AS A SENIOR RESEARCHER AT THE RENOWNED FRAUNHOFER INSTITUTE IN STUTTGART. AFTER RECEIVING A DEGREE IN ARCHITECTURE IN STUTTGART AND PHOENIX, HE STARTED HIS RESEARCH CAREER IN THE VIRTUAL REALITY ENVIRONMENT. HAVING LED MANY OFFICE 21 RESEARCH PROJECTS, HE IS A RENOWNED EXPERT ON INNOVATIONS IN THE FIELDS OF OFFICE, HOTEL, LIVING AND FUTURE CONSTRUCTION, AND AN AUTHOR OF MANY PUBLICATIONS ABOUT WORKING ENVIRONMENTS AND BUILDING PROCESSES OF THE FUTURE.

TOBIAS WALLISSER
DIRECTOR

TOBIAS WALLISSER IS BASED IN BERLIN AND TEACHES AS PROFESSOR OF INNOVATIVE CONSTRUCTION AND SPATIAL CONCEPTS AT THE STATE ACADEMY OF FINE ARTS IN STUTTGART. AS CREATIVE DIRECTOR AT UNSTUDIO IN AMSTERDAM FOR 10 YEARS HE WAS RESPONSIBLE FOR MANY PROJECTS, THE MOST PROMINENT BEING THE MERCEDES-BENZ MUSEUM AND THE ARNHEM INTERCHANGE. AFTER RECEIVING AN ARCHITECTURAL DEGREE IN STUTTGART, HE COMPLETED A POST-GRADUATE AT COLUMBIA UNIVERSITY (NY) IN 1997. HE WORKED WITH ASYMPTOTE ARCHITECTURE ON THE VIRTUAL NEW YORK STOCK EXCHANGE.

Which of your current projects is the most innovative from the research point of view?

Tobias Wallisser: At the start of every project we immediately look for its potential of innovation. As a matter of fact, the German Pavilion at the Expo 2020 in Dubai is a good example to illustrate this further. From the beginning it combined a wide range of research fields, unifying the research into one single project. Due to the federal German political structure, we needed to find a cohesive agent that on the one hand expressed diversity and on the other hand, unity. In our project this proved ideal as we ended up with different research elements which were united in one total environment – the German Pavilion as a vertical campus. Seen from this angle, the entire project offers a vast potential of innovation in most different ways. It is our goal to make this pavilion as exciting as possible, integrating as much research and innovation as we can possibly do in both the structure itself and the exhibits.

GERMAN PAVILLON AT EXPO 2020

Both of you teach and research. How do both of you use the knowledge and information you retrieve from your academic pursuits in your architecture?

Alexander Rieck: I started my research work at the Fraunhofer Institute 20 years ago with topics such as virtual and augmented reality. In those days that kind of research had a strong focus on automotive and shipbuilding industries. However, my deep seated passion has always been for architecture and how modern technology can be adopted by the construction industry.

For example, at the Fraunhofer Institute I have been involved in the "Office 21" project for over 20 years now. There we study new concepts of work, like collaborative work spaces or co-working centers. In parallel I did my PhD on "Well-being at the Workspace", in other words, how to integrate the psychological and physiological effects of the office environment into the planning and construction processes. Nowadays that kind of research is very virulent because it deals with creative spatial environments in connection with the individual and cooperative well-being. And, as a matter of fact, all of this information is also flowing back into our architectural practice.

Further research initiatives of mine have dealt with the future of hotels and the "City of the Future" ("Morgenstadt") where our office worked on MASDAR City in Abu Dhabi with regard to topics like traffic, energy and the Smart City. Right now I am involved in the subject "Construction site 2030" which deals with the future of the job-site and digital planning processes in combination with industry 4.0 and artificial intelligence (AI).

MY STUDENTS WILL BE THE ARCHITECTS OF THE FUTURE, AND THEY WILL HAVE TO BE EQUIPPED WITH THE RIGHT KNOWLEDGE, TOOLS AND WAYS OF DEALING WITH CLIENTS AS WELL AS THE PROBLEMS OF SOCIETY.

Tobias Wallisser: There are mutual benefits in running an office and pursuing an academic career at the same time. Teaching keeps you in constant touch with young people, their needs and their views of the world. On the other hand, the daily practical experience in the office tells you what makes the world go round. My interest in teaching brings both of these worlds together.

My students will be the architects of the future, and they will have to be equipped with the right knowledge, tools and ways of dealing with clients as well as the problems of society. Of course, there are also the aspects of teaching which identify future opportunities for architects, introduces you to new tools and ways

MASDAR

of thinking and working. I personally like the speculative nature in teaching. There is a nice quotation by Wolf Prix (Coop Himmel-b(l)au) saying that: “Tomorrow, today will be yesterday”. For me teaching is exactly about this relativity of time.

Your office designs a very broad range of projects, anything from a skyscraper in Abu Dhabi, the German Expo 2020 Pavilion in Dubai, a speculative office building for start-ups in Berlin or even a youth hostel in Bayreuth. Where is the common link?

Tobias Wallisser: Well, that is a very good question. If you have an office, you sooner or later become an expert in some fields of design. On the other hand, architects are generalists. We are educated very broadly, we are trained to have a wide range of interests and knowledge. Take for example an office building. It is not just about delivering a certain number of square meters at the cheapest price possible. That is not architecture, as only one parameter of many has been investigated. Unfortunately, a lot of architecture nowadays is done just like that. However, for us at LAVA it is more productive to ask: “What type of office building is it? What type of work will be done there and what environment does that type of work really need? Asking these questions allows us to define specific answers.

Often, we rephrase the question and at the same time start the process of providing the answer(s). Take the instance of the

Bayreuth Youth Hostel. The question was, why would you stay at a youth hostel at all? With regard to the food on offer, the bunk beds etc. it may not be a very desirable experience. Our answer was: A youth hostel is no standard type of accommodation. It may be simple and rough however, it creates lots of opportunities of meeting people and making friends. So, we designed a shell or a shelter that offers plenty of chances for social interaction. We looked into modular systems, but redefined them. Our module is not a boxed space. It is rather a space-divider that accommodates all the infrastructure, i.e. showers, baths, toilets and the beds. Thus we ended up with a fairly unique spatial arrangement inserted into a larger structure. And at the same time, it has become a very adaptive structure - a concrete building with a wooden facade which could easily be converted into a kindergarten, a school or an old people’s home.

PHILLIPS

Alexander Rieck: The link is the approach towards the project. Sometimes we test our ideas in small projects and only then we are able to integrate them in bigger projects. The same amount of passion is injected into all of our projects, though sometimes you can pour more resources into bigger projects.

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Have you been cultivating a particular LAVA style of design?

Tobias Wallisser: Our architecture is not about a signature style, on the contrary it is a specific way of dealing with problems creating opportunities. However, we go even further by rephrasing and redefining questions - i.e. often the original brief - we have been asked to solve. We systematically single out the space for innovation, research and for a new interpretation of basic needs. Of course, we still see us as architects or designers with a clearly defined design intent. There is also a certain spatial language which we prefer, but that is secondary. Our pure interest is in developing something innovative as an answer to human needs.

Alexander Rieck: At the moment we are facing a very interesting period when a new architectural epoch appears on horizon, i.e. one that is based on a digital society. Let us challenge the new opportunities and redefine our design accordingly.

Are you implementing technologies like BIM or AI in your architecture and design process?

Alexander Rieck: Naturally, we use a lot of newly emerging tools and implement them into our design work. But, for example, BIM is no tool in our design process. Namely, BIM descripts a data linkage from which you deviate a planning process or a plan. Yet, within the entire digital cycle BIM is only one step and must not be overjudged. In the architectural design process you only have approximately 10% of extreme creative peeks. During the rest of planning process the work deals with rules, regulations, building codes, databases, material products, which are all parts of operative processes. Here, I believe, is a huge chance for automation with the help of AI.

However, the massive change in architecture will be the switch from linear processes to multi-parallel planning. There a variety of “umbrellas” will open up – optimized and automated - for each individual design scenario. That will be totally different development processes which will also generate different business models.

THE MASSIVE CHANGE IN ARCHITECTURE WILL BE THE SWITCH FROM LINEAR PROCESSES TO MULTI-PARALLEL PLANNING.

Tobias Wallisser: Every designer, architect or any other person who deals with this technology should always ask the following question first: “What can I achieve with the help of this technology which I have not been able to do before?” For instance, most >

people in the Western world possess a smartphone, hence we might do away with street signs as people could easily find their ways with the help of their phones. Just think, what such an approach would do to architecture?

Therefore, technology should not just be a tool that helps you doing things digitally. It should rather enable you to generate a new environment, for example. Let us revert to the German Pavilion and the Expo 2020 with its motto "Connecting Minds". We picked it up and interpreted it like this. Every visitor to the German Pavilion will be interconnected with any other visitor during his stay by an intelligent name tag. This will enable every single visitor, if they wish, to interact with each other freely. Theoretically each visitor should get a better understanding about his environment, socially, intellectually and even architecturally.

How do you collaborate with engineering practices such as Transsolar?

Tobias Wallisser: Architecture is a team sport! The size of what we have to consider is far too large for a single person to look at. Driven by the design process experts from different fields are introduced. The architect, as the generalist, is maybe the diplomat whose task it is to negotiate the deal. One could even say the architect is the glue!

THE ARCHITECT, AS THE GENERALIST, IS MAYBE THE DIPLOMAT WHOSE TASK IT IS TO NEGOTIATE THE DEAL. ONE COULD EVEN SAY THE ARCHITECT IS THE GLUE!

This includes finding out ideal partners, i.e. experts. It is a very complex optimization process where you try to incorporate a lot of different parameters into one experience. That is something which I as an architect like very much. As a result of the negotiations we need engineers with strong opinions, which are rooted very much in contemporary life. In the end it is all about shaping life and you need people to look at that from very extreme points of view.

Alexander Rieck: Being on the cutting edge of architecture we always need the input of people with a similar approach. We love to implement their ideas and some of these outstanding international engineers enjoy working with us. Once you have the right team you are able to perceive a project as a comprehensive entity and not just as a collection of single problems.

Architecture is in a constant process of transformation. Where do you perceive the greatest advances and where do you think lies the future of architecture?

Tobias Wallisser: Architects are natural born optimists. Architecture is also a very slow discipline and there is a lot of disruptive transformation around us. We must not embrace everything at first sight, we have to retain a critical function. Therefore, it is necessary that most architects remain optimists, making a positive contribution in generating better lives for more people. I think that is our challenge.

Technology is one part in that equation, but it is not the only part. One has to look at the broader picture. There are ongoing transformations in many fields, we architects must "edit" the use of technology. In this context I still love what Cedric Price told one of his clients, "You don't need a house, you need to divorce."

Alexander Rieck: In future architecture and the construction industry will be collaborating much further. As a result we will

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CERTAINLY, THE NEXT GREAT STEP WILL BE THE INTEGRATION OF ARTIFICIAL INTELLIGENCE INTO THE PLANNING PROCESSES AND THAT WILL BRING NEW SOLUTIONS IN TERMS OF OPTIMIZATION.

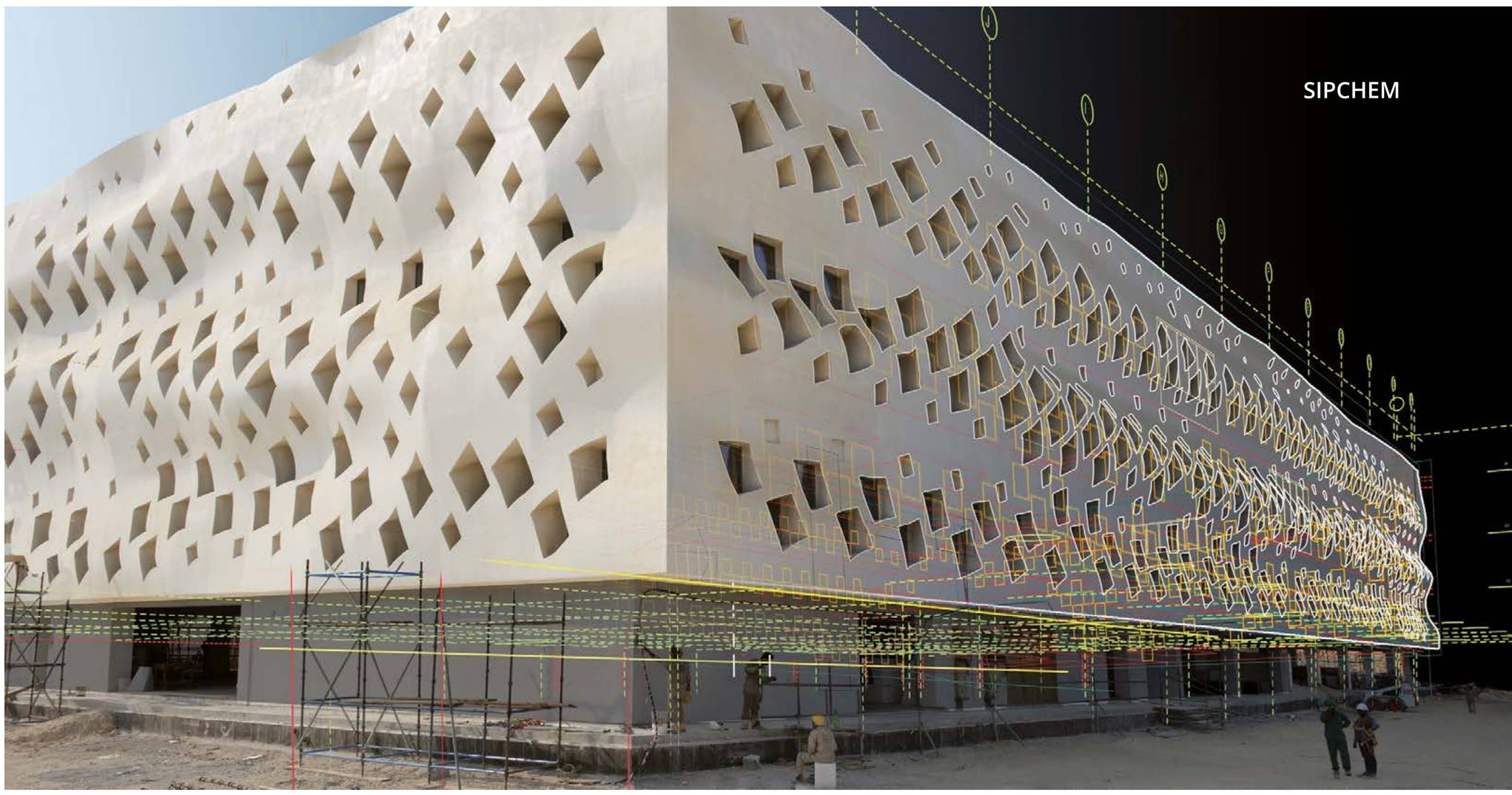
experience different architectures and development processes. Certainly, the next great step will be the integration of artificial intelligence into the planning processes and that will bring new solutions in terms of optimization. Three key aspects are paramount to any kind of future architecture:

1. Reduction of worldwide carbon dioxide emissions: We have to build for 11 trillion people on this planet and simply cannot carry on as before.

2. Digitalization: It affects everything from production, schools, entertainment, shopping to new spaces which fit the demands of society.

3. Building procedures: We need new planning and building regulations as well as new business models in context with new information and data sets.

With all of these developments, I think, we are in the frontline of a renaissance in architecture which will also generate a new architectural language. These are very exciting times and it is a pleasure taking part. —



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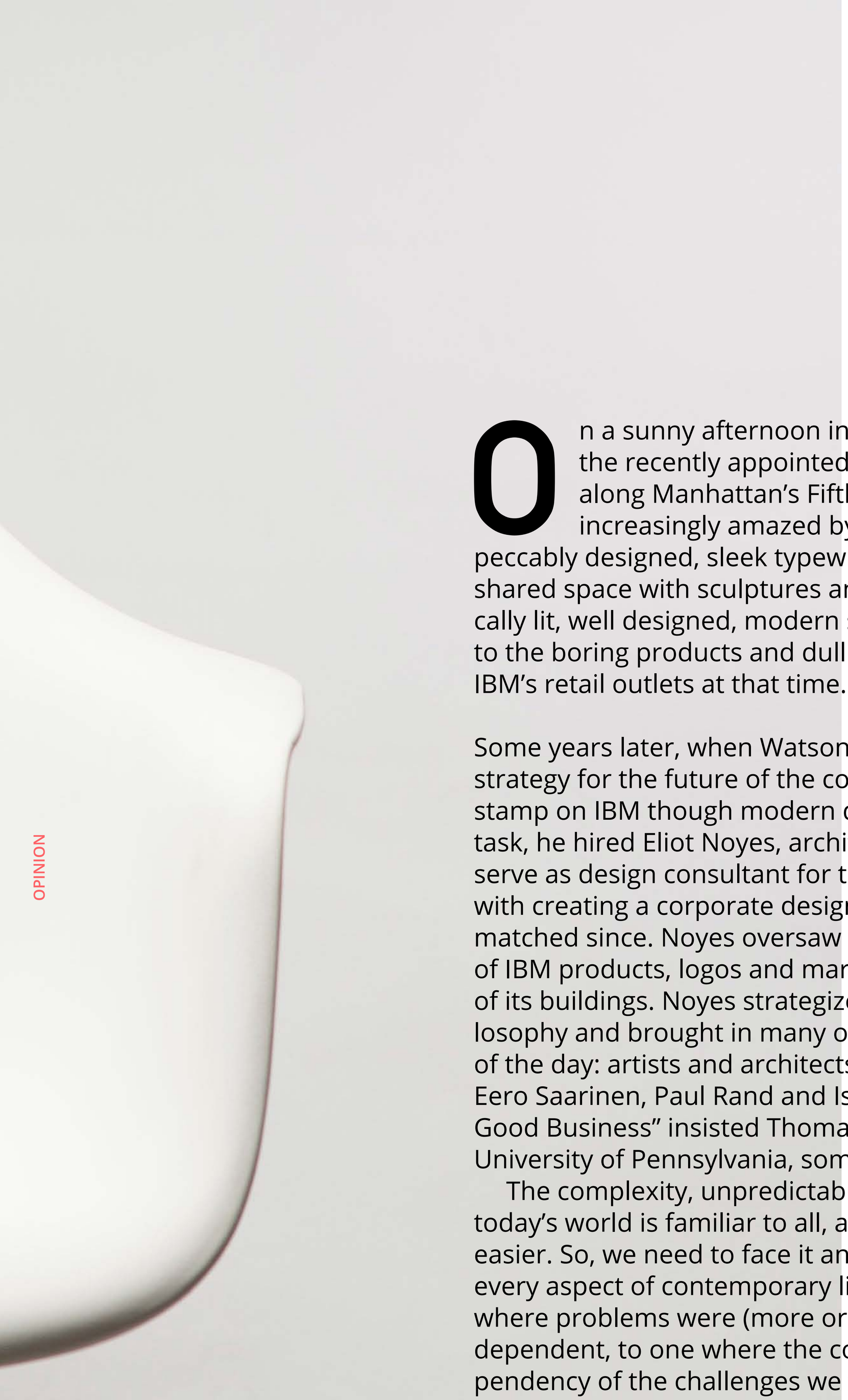
Good Design is Good Business

BY EDGAR GONZÁLEZ

THE WORLD ECONOMIC FORUM PREDICTS THAT VISION, CREATIVITY AND CRITICAL THINKING WILL BE MOST DESIRABLE JOB SKILLS FOR 2020 AND BEYOND. TOMORROW'S LEADING COMPANIES UNDERSTAND THAT TRUE BUSINESS INNOVATION COMES FROM HIGHLY CREATIVE EMPLOYEES WHO ARE WILLING TO QUESTION, DISRUPT AND REDESIGN.



On a sunny afternoon in 1952, Thomas J. Watson Jr., the recently appointed president of IBM, was walking along Manhattan's Fifth Avenue and found himself increasingly amazed by the brightly colored and impeccably designed, sleek typewriters in the Olivetti shop. They shared space with sculptures and paintings in an airy, theatrically lit, well designed, modern showroom, in sharp contrast to the boring products and dull experience that characterized IBM's retail outlets at that time.

Some years later, when Watson became CEO, he defined the strategy for the future of the company, declaring: "I will put my stamp on IBM though modern design." To help him fulfill this task, he hired Eliot Noyes, architect and industrial designer, to serve as design consultant for the company. He was charged with creating a corporate design program that hasn't been matched since. Noyes oversaw everything, from the creation of IBM products, logos and marketing material, to the design of its buildings. Noyes strategized an underlying design philosophy and brought in many of the most talented designers of the day: artists and architects like Ray and Charles Eames, Eero Saarinen, Paul Rand and Isamu Noguchi. "Good Design is Good Business" insisted Thomas J. Watson Jr. in a lecture at the University of Pennsylvania, some years later in 1973.

The complexity, unpredictability and fast pace of change in today's world is familiar to all, and the situation will not become easier. So, we need to face it and learn how to operate in it. In every aspect of contemporary life, we have outgrown a reality where problems were (more or less) simple, knowable, and independent, to one where the complexity, fuzziness and interdependency of the challenges we face are more and more difficult to frame, let alone solve them.

Corporations are not immune to this either. Two months ago, the McKinsey Quarterly, the consultancy firm's prestigious publication, was dedicated to the Business Value of Design, conducting one of the most ambitious surveys ever made. More than 300 companies were contacted over the course of five years and their design decisions tracked, along with financial data, in order to measure what the McKinsey Design Index (MDI).

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The consultancy intends to publish the data soon, along with a tool that can be used to measure your company's MDI and compare it to others. Each of the indicators at the MDI shows that design is one of the best investments a company can make today.

The World Economic Forum predicts that vision, creativity and critical thinking will be the top three skills for 2020 for the on-going, so-called, Fourth Industrial Revolution. Every company wants to be at the forefront and on the cutting edge of innovation, and to achieve that, yours will need highly creative employees.

Creativity is a much sought-after quality, and not one that can typically be achieved through training. It takes time to develop a proper creative attitude, and it doesn't come alone: working comfortably with ambiguity, uncertainties, asking for disruptive innovative solutions, keeping a critical state of mind, willingness to alter the status quo and inventiveness are just some of the other aptitudes required by successful creative practitioners.

Nevertheless, there are professions where creativity is at the very core of their practices. Designers and architects, whose work depends largely on applied creativity and critical thinking to bring innovation to their everyday work, have been practicing each of those skills since time immemorial.

By definition, design is intrinsically innovative. What is the point of designing something that already exists? So, when hungry for innovation, there is a clear choice for professionals to look at: good design! —

EDGAR GONZÁLEZ
DIRECTOR, BACHELOR IN DESIGN, IE SCHOOL OF ARCHITECTURE AND DESIGN

BASED IN MADRID, EDGAR GONZÁLEZ LEADS THE BACHELOR IN DESIGN PROGRAM AT IE SCHOOL OF ARCHITECTURE AND DESIGN. HE FOUNDED EGD EDGAR GONZÁLEZ DESIGN, A STRATEGIC DESIGN AGENCY, WHERE HE SERVES CLIENTS AS A STRATEGIC CONSULTANT SPECIALISED IN APPLYING DESIGN PROCESSES TO COMPLEX PROBLEMS AND NARRATIVES. AS, EDITOR-IN-CHIEF OF EDGARGONZALEZ.COM SINCE 2002, ONE OF THE MAIN REFERENCE WEBSITES ABOUT ARCHITECTURE AND DESIGN IN THE SPANISH SPEAKING WORLD, HE IS TUNED IN TO NEWS AND TRENDS IN ARCHITECTURE AND DESIGN THROUGHOUT THE WORLD. HE HOLDS A BACHELOR IN ARCHITECTURE (ITESO UNIVERSITY, GUADALAJARA, MEXICO, 1996) AND A M.A. IN COMPLEX ARCHITECTURE (ALICANTE UNIVERSITY, ALICANTE, SPAIN, 2007).

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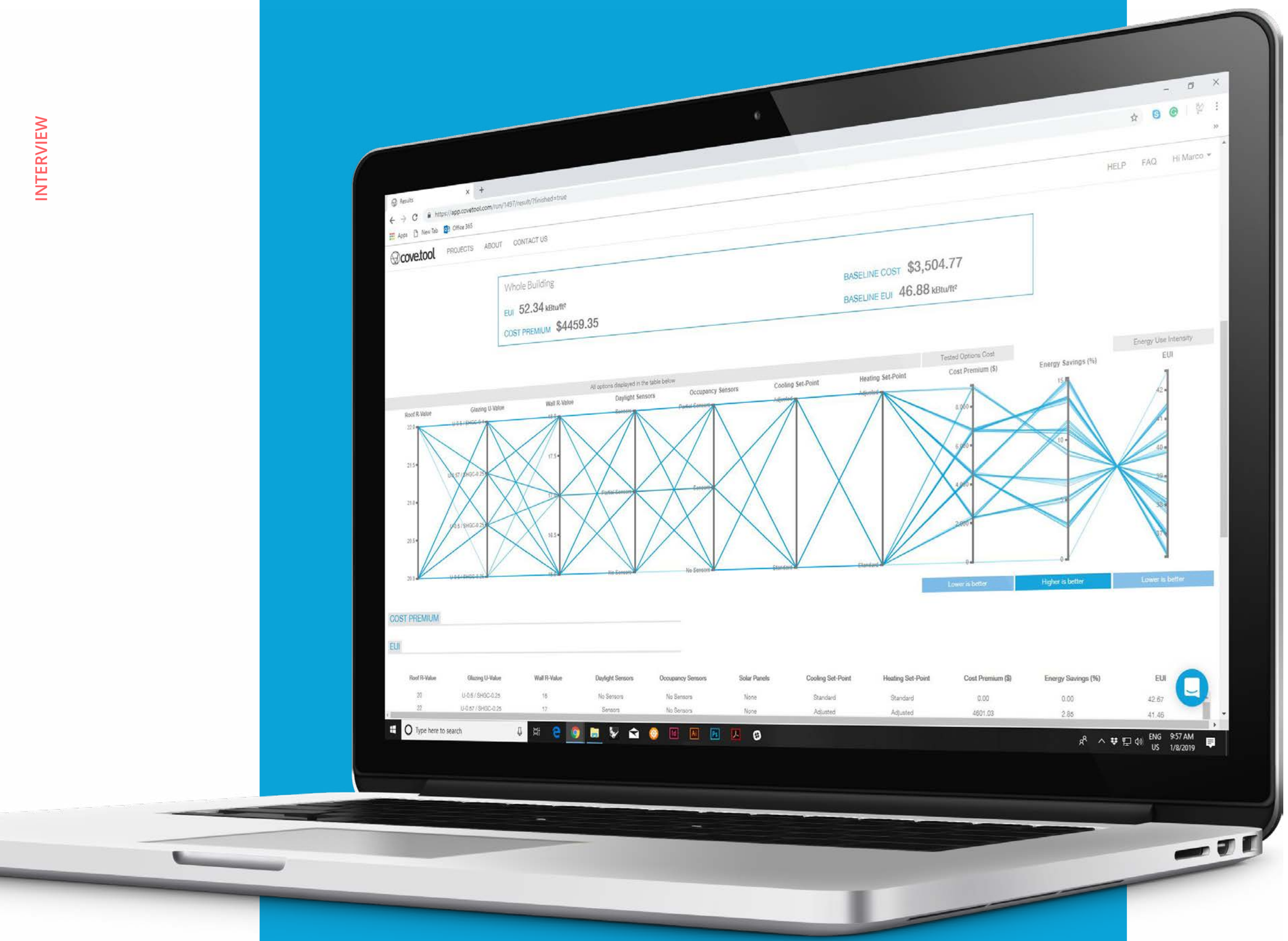
Design Tools for Sustainable Building: Cove.Tool Automates Energy Optimizations

INTERVIEW WITH SANDEEP AHUJA, CO-FOUNDER COVE.TOOL



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COVE.TOOL IS A SOFTWARE PRODUCT GROWN AND DEVELOPED BY PATTERN R+D, A SUSTAINABILITY CONSULTING FIRM LED BY BUILDING SCIENTISTS AND ARCHITECTS PATRICK CHOPSON AND SANDEEP AHUJA. FROM THEIR VAST EXPERIENCE WORKING ON HIGH PROFILE PROJECTS WITH COMPLEX STAKEHOLDER GROUPS, THEY IDENTIFIED THE NEED FOR A DECISION-MAKING TOOL WHICH COULD ASSESS OPTIONS FOR COST AND ENERGY SAVINGS IN AN EASY-TO-UNDERSTAND GRAPHICAL FORMAT. SHORTLY THEREAFTER, THE FIRST VERSION OF COVE.TOOL WAS BORN.

Could you tell us a little about your background and how you came up with the idea of cove.tool?

I think my career path was influenced by my upbringing. Since my father was a diplomat, growing up we moved to a new country every four years. We moved to a new place with a new climate zone, new building types and a new culture, and I believe this exposure to different environments interested me and pushed me to become an architect.

While practicing as an architect, I kept wanting to design green buildings, but I had no real way of quantifying this impact. I wanted to understand how one solution better or greener than other solution quantitatively, but there were no numbers. The information I found was very general, saying a solution is green, so therefore it's great.

That's what brought me to my Master's program at Georgia Tech. I concentrated my studies on building physics and high-performance building design. This jump-started my career into sustainability consulting, energy modeling and building performance.

After my studies I worked at a large firm and I started their energy lab, a small consulting unit serving 26 offices across the globe. It developed like a startup inside a giant company.

Soon after that, I founded our sustainability consulting company called Pattern R+D. The consulting company grew rapidly, which confirmed the strong need. We worked as Pattern R+D for a few years on many amazing projects, but then we realized there were some parts of our process that were the same manual process over and over again.

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We had the idea to automate these parts of our process instead of continuing to do it manually. That is how cove.tool started, by automating our own consulting company to make it even more efficient and process-driven. Once we had the software, we began selling it and everyone wanted it. We've just been adding features ever since.

Who is the founding team behind cove.tool?

Patrick Chopson and I both originally came up with the idea, and got in touch with Daniel, our CTO, to be a part of this vision.

Patrick and I met at Georgia Tech and we were in the Master's program together. We both have a background in architecture, sustainability and high-performance building. Patrick also has a background in mechanical engineering.

We didn't have a beautifully written software at first. We gained a lot of traction with our early software, which was hacked together code connecting this plug and that plug, but it needed improvement. Later we brought on Daniel to be our CTO, to actually write the software beautifully.

SANDEEP AHUJA

CO-FOUNDER COVE.TOOL

SANDEEP AHUJA, CO-FOUNDER OF COST AND ENERGY OPTIMIZATION SOFTWARE COVE. TOOL, INC., HAS WORKED WITH A VARIETY OF CLIENTS IN ACADEMIC, HOSPITALITY, HEALTH-CARE AND CORPORATE SPHERES. SHE IS PIONEERING THE INTEGRATION OF ENERGY ANALYSIS INTO THE DESIGN AND CONSTRUCTION PROCESS. SHE RECENTLY WON THE *ATLANTA 30 UNDER 30* AWARD FOR DEVELOPING COVE.TOOL, A UNIQUE METHODOLOGY TO OPTIMIZE FOR COST IN SUSTAINABLE BUILDINGS. AS A BUILDING PERFORMANCE SPECIALIST, SANDEEP SPECIALIZES IN INFORMING PERFORMANCE-RELATED BUILDING DECISIONS IN CAREFUL CONSIDERATION OF COST.

What exactly is the core product of cove.tool?

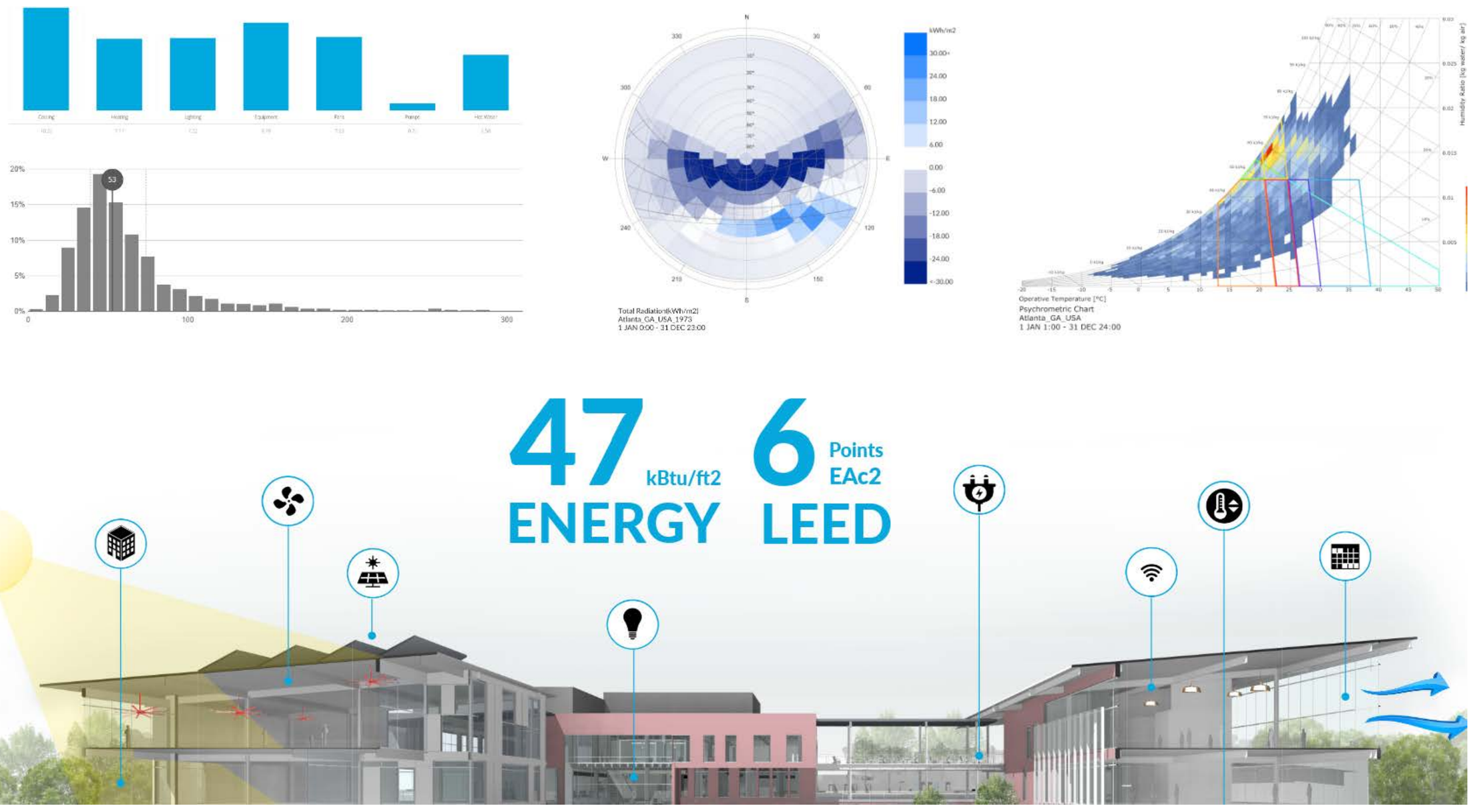
If you're one of our core clients, you're either an architect, a mechanical engineer, a sustainability consultant, an owner or a contractor.

To get an energy model, our core clients would typically need to appoint an expensive energy modeler to the project. Maybe about two weeks later, this consultant could describe how a building is currently performing and make recommendations, but it's a very time-intensive and expensive process.

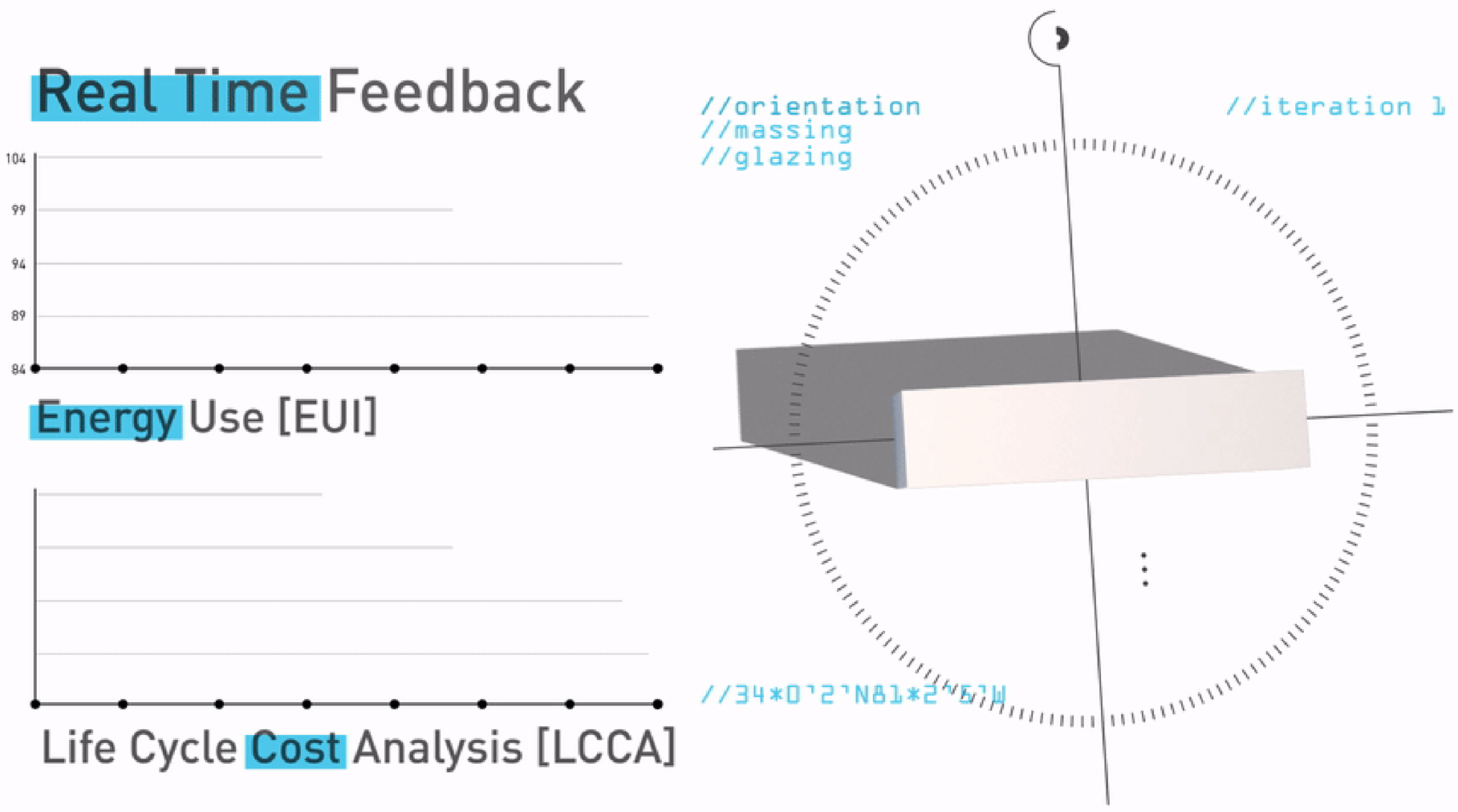
cove.tool automates that entire process. Clients can use the software and select their building location, building size and provide some basic geometry. cove.tool can also automatically import the geometry and data from models in other programs like Revit, which is a BIM software, and from Rhino or Grasshopper for example.

Then all of the energy modeling inputs are automated. They're pre-coded based on an energy code. The moment a project is started for an office in California, or an office in Germany, cove.tool knows what the lighting requirements should be, what the HVAC requirements should be, has all of the weather data required and in less than five minutes, it can provide an energy number.

Then as the design develops and selections are made, for the type of roof, type of windows, type of walls, cove.tool can calculate the energy number for these elements in comparison to an energy goal. There are so many different products out there and



for example, there's no way of knowing that if the energy goal is 20% better than the energy code, where in the building to invest in products to improve the overall performance. For example, should you buy the better glass, or the better roof, or spend money on the HVAC? You can define multiple options for all of these parameters, and it can run the entire optimization in the cloud for every option with every option to find the most cost-optimal ways, the cheapest way to get to your energy target. This is unique to our software.

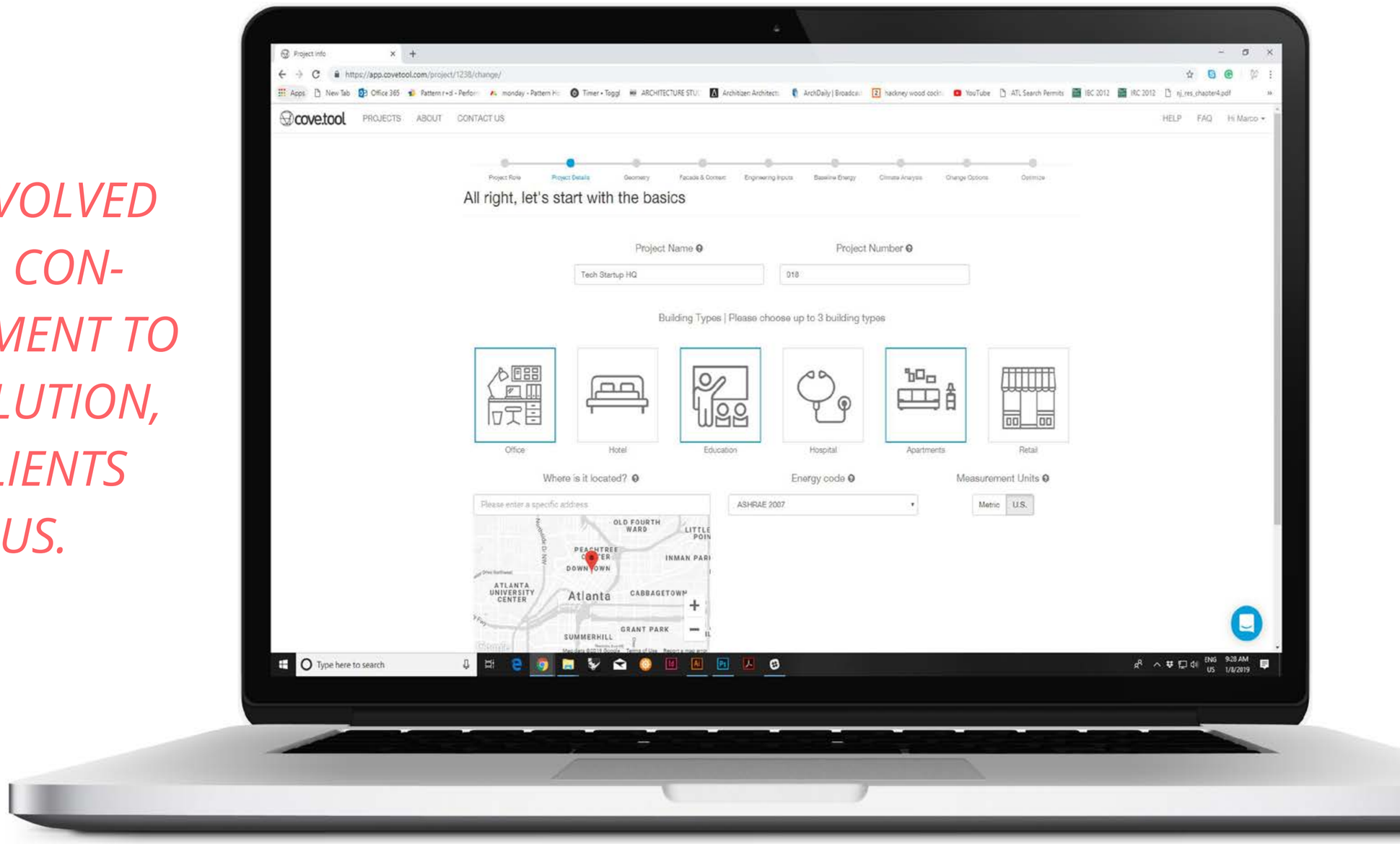


Does that mean architects could also use your product within the design process of a building to test and improve different versions of the design in terms of the energy sufficiency?

Yes, you can vary the glazing percentage specifically for example or you can even change within the software. For example, you can change the window to wall ratio from 60% to 50% very easily. Or if you're passionate about having a lot of window area, then you can change your glass type, and perhaps you would learn to then use a more efficient glass. This allows the user to consider all of these factors in an automated and optimized way, holistically.

You don't have to go back and change your geometry. Once your geometry is in, you can make all your changes within cove. tool.

THE PRODUCT EVOLVED SLOWLY FROM A CONSULTING AGREEMENT TO A SOFTWARE SOLUTION, SO OUR FIRST CLIENTS CAME RIGHT TO US.



How do you deal with building codes which are regionally very different around the world?

That is a very complex issue and we do a lot of it manually. We created our own database code by code. Currently, the software supports all of North America including Canada and it's based off of the ISO standard which is used in Europe for code compliance as well. We haven't pre-loaded all of the ISO baselines in it yet, but that's coming early 2019. We will start to support Europe in 2019.

How did you find your first clients when you launched your Minimum Viable Product (MVP)?

The product evolved slowly from a consulting agreement to a software solution, so our first clients came right to us. We were using the software while consulting and our clients asked for a software subscription because they had already seen it work. They saw how, for instance, in one project we did over at Emory University which was a $90 million building, they saved a little over half a million dollars by using our software which is a lot of money.

Our clients were then able to use that money elsewhere in the design. Since we already had many case studies with real numbers and real savings and real project teams that had tried it out, and we were able to publish these case studies, most of our first clients came to us. Then all of our future clients we've reached through email marketing, phone calling, webinars, trade shows, everything! Now we have thousands of customers.

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What was your most effective marketing channel?

Email marketing and webinars. We have AIA accredited webinars where architects would get credits for participating, like the LEED Learning unit. We would show how to design and build a sustainable project using cove.tool. Each time we would show how to go from nothing to having fully complete brand-new project in less than 15 minutes. After a sample project, at the end we would show a case study which users found really helpful.

You recently closed a $750K seed round. Could you tell us more about the process of raising venture capital for your startup?

Our venture capital journey started after we won the Atlanta Startup Battle.

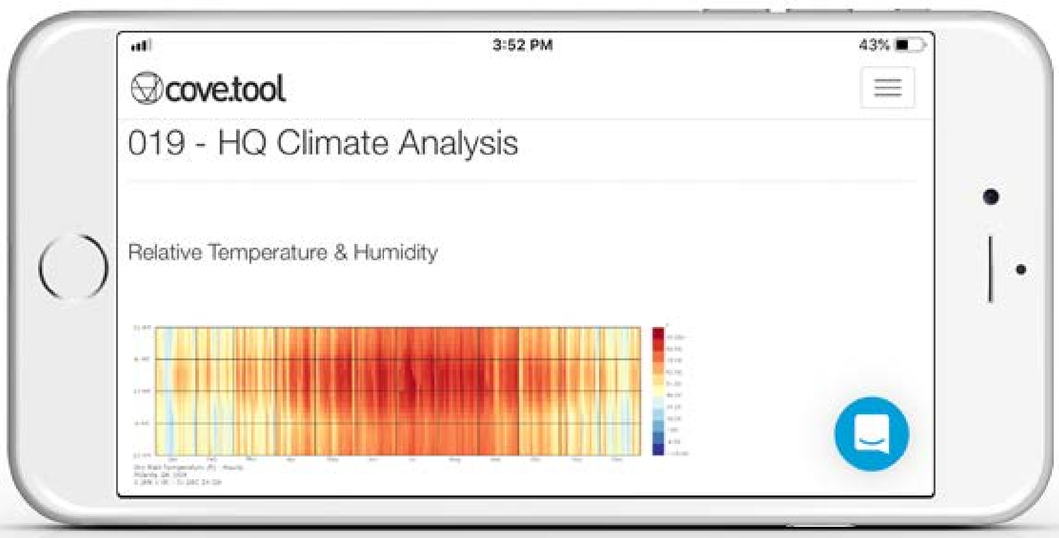
That particular year, over 600 people had applied to that start-up battle and the whole process took two-and-a-half-months.

Once we won the startup battle, it opened a lot of doors for us because a lot of people then heard about us. From all of the investors I met, it seems they all either know each other or have heard of each other. Once we had our first set of investors by winning the startup battle, the other connections were made more easily. It opened the door to pitch to a few investors and they made our seed round.

How did you calculate the amount of money you needed for your seed round?

This was a very rigorous process because we didn't want to take too little that we ran out, but we didn't want to take too much so we were giving away such a big chunk of the company. We did the calculation of what we thought all of our future hires were going to be, how many sales we were anticipating to make, essentially the total burn, total expenses.

Do you have any advice for Archipreneurs who are interested in starting their own company in the built environment?



There's so much room for innovation. I truly do think that the AEC industry (Architectur, Engineering, Construction) is the slowest progressing of all industries out there. There's still so much that needs to be done, that any good idea you come up with, you should do because there's a very high chance you could be the first.

Also, bootstrap as far as you can. I think we were able to get a good valuation for our company because we already had a product and customers (from bootstrapping). Had we gone out to raise money with just an idea, we would have had to give away more than half of our company just to get little amount of money. I really think bootstrapping is a great idea early on, and then when you have a concept together and you're raising money to grow your markets to get more customers, that's the best time to raise capital.

What are your thoughts on the future of the built environment? How can it improve, and what continues to inspire you?

I feel it needs to be all more automated. There are too many manual steps. But anytime I say that in conferences, architects get a little worried that this implies taking the design away from the designer. That's not the case. Automation would just take the chore out of the design work, so designers can truly design.

We are now able to design for the experience, and are not spending all our time validating, wondering if a building will pass the energy code, building code or meet the budget in the end. I feel all of those things, hopefully, will be automated. Some of them currently are, and more and more automation so that the people are able to spend their time a lot more efficiently and are able to concentrate on the user experience and what the space truly feels like, instead of how to fit 20 apartments in a certain amount of space. That should not be a designer's problem. —

I FEEL IT NEEDS TO BE ALL MORE AUTOMATED.

>> CLICK TO JUMP TO PAGE <<

Beyond BIM: Architects Create a Wider Building Management Tool

INTERVIEW WITH SHERIF ABDELMOHSEN, CO-FOUNDER AND MANAGING PARTNER, BIMMUNITY

AYMAN ASSEM, CO-FOUNDER AND MANAGING PARTNER, BIMMUNITY

MOHAMED EZZELDIN, CO-FOUNDER AND MANAGING PARTNER, BIMMUNITY

AHMED IBRAHIM, CO-FOUNDER AND MANAGING PARTNER, BIMMUNITY

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BIMMUNITY IS A CLOUD-BASED SYSTEM AIMED AT EMPOWERING THOSE CONCERNED WITH THE EFFICIENT MANAGEMENT OF THE BUILT ENVIRONMENT. BIMMUNITY BUILDS UPON THE MERGER OF SEVERAL INTERTWINED CONCEPTS AND CONSTITUENTS THAT SHAPE ITS UNIQUE INTEGRATED NATURE, INCLUDING BUILDING INFORMATION MODELING (BIM), GEOGRAPHIC INFORMATION SYSTEMS (GIS), AND DATABASE AND SERVER TECHNOLOGY, IN ORDER TO MANAGE THE BUILT ENVIRONMENT THAT INVOLVES MULTIPLE STAKEHOLDERS AND VAST AMOUNTS OF DATA AND COMPLEX OPERATIONS.

Could you tell us a little about your background? What made you decide to found BIMMUNITY?

Sherif Abdelmohsen: Since my graduation from architecture school in 2000, I have developed a growing passion for computational design and the exciting cross-disciplinary studies between architecture and computer science. I first encountered this during my Masters thesis (2004), when I explored the integration of mixed reality and artificial intelligence in architectural education. This led me to further investigate this interesting area of research, where I pursued a non-degree Fulbright program at the Computational Design Laboratory at Carnegie Mellon University. This experience allowed me to develop further modes of inquiry in areas at the intersection of design computing and design cognition. Following this highly experimental and eye-opening experience, I embarked on my PhD journey at Georgia Institute of Technology, where I was exposed to a wide array of concepts, tools and methods in computational design, specifically those concerning research and development in building information modeling (BIM).

After participating in several research and professional projects that involve the implementation of BIM practices in the United States and Egypt, and with the growing potential of BIM, GIS, database and cloud technology, a group of like-minded researchers and myself joined forces and established BIMMUNITY, a technology solutions company, with the purpose of developing a set of applications that address the efficient management of the built environment. Our team shares a lot in common, as we are all architects by virtue of our undergraduate education, but at the same time it embraces different and unique perspectives

and experiences. Our team includes Ayman Assem, an expert in space layout planning and management and geospatial analysis, Mohamed Ezzeldin, a seasoned professional and expert in spatial design experience, and Ahmed Ibrahim, an expert in software development and information technology.

SHERIF ABDELMOHSEN

CO-FOUNDER AND MANAGING PARTNER AT BIMMUNITY

SHERIF HAS OVER 18 YEARS OF PROFESSIONAL EXPERIENCE IN ARCHITECTURE. HE HOLDS A PHD DEGREE IN ARCHITECTURE FROM GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, GA, USA (2011). HE IS CURRENTLY ASSOCIATE PROFESSOR OF DIGITAL MEDIA AND DESIGN COMPUTING AT THE DEPARTMENT OF ARCHITECTURE AT THE AMERICAN UNIVERSITY IN CAIRO, EGYPT. HE TEACHES DESIGN STUDIOS AND COURSES RELATED TO DESIGN COMPUTING, AND HAS EXTENSIVE PUBLICATIONS IN THE AREA OF BIM, PARAMETRIC DESIGN, AND RESPONSIVE ARCHITECTURE, WITH OVER 40 JOURNAL AND CONFERENCE PAPERS.

AYMAN ASSEM:

CO-FOUNDER AND MANAGING PARTNER AT BIMMUNITY

AYMAN HAS OVER 17 YEARS OF PROFESSIONAL EXPERIENCE IN ARCHITECTURE. HE HOLDS A PHD DEGREE IN ARCHITECTURAL ENGINEERING FROM AIN SHAMS UNIVERSITY, CAIRO, EGYPT (2011). HE IS CURRENTLY ASSISTANT PROFESSOR AT THE DEPARTMENT OF ARCHITECTURE AT AIN SHAMS UNIVERSITY, WHERE HE TEACHES ARCHITECTURAL DESIGN STUDIO, URBAN DESIGN, AND COMPUTER APPLICATIONS IN ARCHITECTURE, AND A RESEARCHER IN THE AREA OF SPACE LAYOUT PLANNING, GEOGRAPHIC INFORMATION SYSTEMS, DESIGN COMPUTING, AND BEHAVIORAL MAPPING.

MOHAMED EZZELDIN:

CO-FOUNDER AND MANAGING PARTNER AT BIMMUNITY

MAHAMED HAS OVER 17 YEARS OF PROFESSIONAL EXPERIENCE IN ARCHITECTURE. HE HOLDS A PHD DEGREE IN ARCHITECTURAL ENGINEERING FROM AIN SHAMS UNIVERSITY, CAIRO, EGYPT (2015). HE IS CURRENTLY ASSISTANT PROFESSOR AT THE DEPARTMENT OF ARCHITECTURE AT AIN SHAMS UNIVERSITY AND ADJUNCT FACULTY AT THE AMERICAN UNIVERSITY IN CAIRO, WHERE HE TEACHES ARCHITECTURAL DESIGN STUDIO, ARCHITECTURAL CRITICISM, AND FREEHAND SKETCHING, AND A RESEARCHER IN THE AREA OF SPATIAL DESIGN EXPERIENCE.

AHMED IBRAHIM:

CO-FOUNDER AND MANAGING PARTNER AT BIMMUNITY

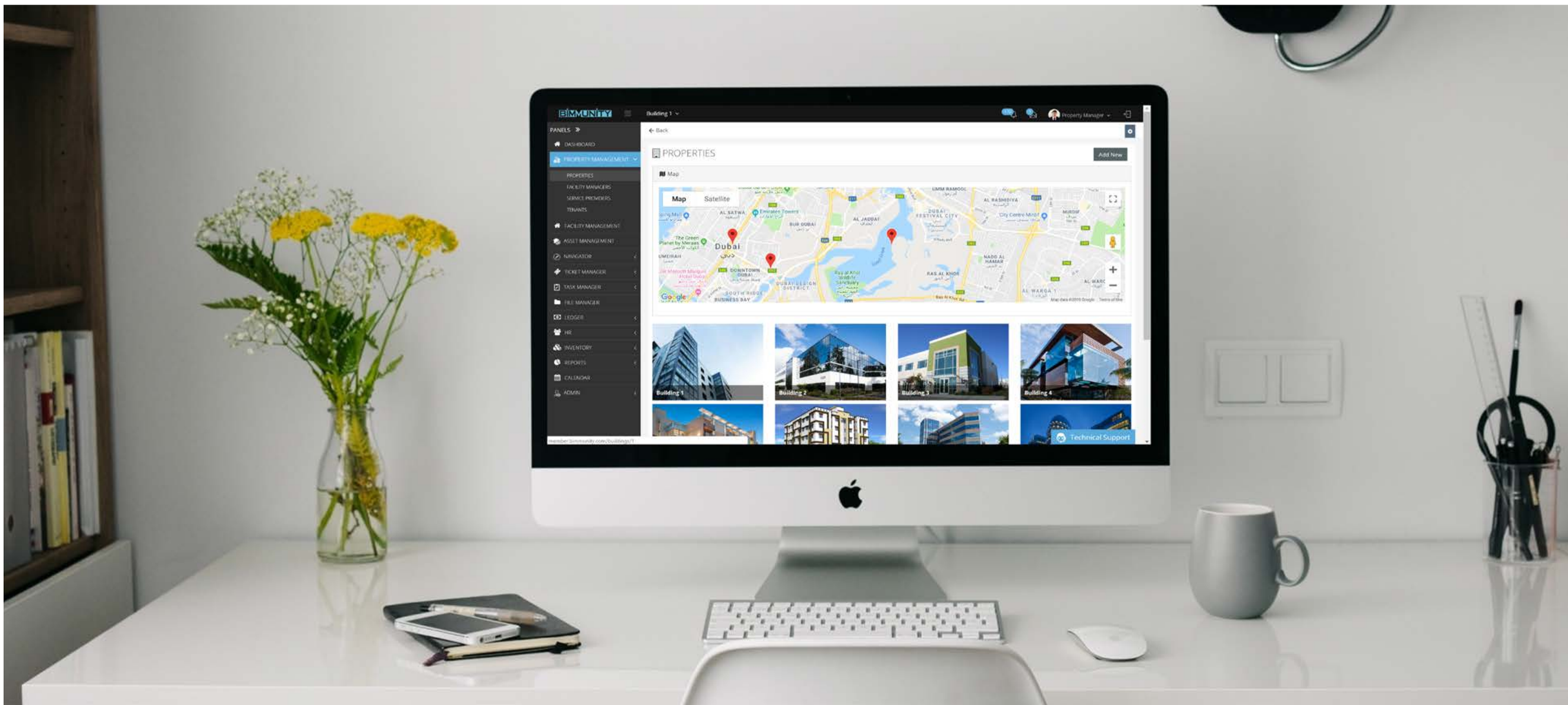
AHMED HAS OVER 10 YEARS OF PROFESSIONAL EXPERIENCE IN THE AREA OF SOFTWARE DEVELOPMENT AND INFORMATION TECHNOLOGY. HE HOLDS A BSC DEGREE IN ARCHITECTURAL ENGINEERING FROM AIN SHAMS UNIVERSITY, CAIRO, EGYPT (2008). HE IS ALSO CHIEF EXECUTIVE OFFICER FOR SEVERAL SOFTWARE DEVELOPMENT COMPANIES INCLUDING SEO EGYPT LLC, SANDSTORM DIGITAL FZE, AND AFDAL.

Since 2012, our team has been experimenting continuously and in different contexts and projects with computational approaches that involve behavioral mapping, space efficiency and optimization, building management, project planning, and many other concepts that all aim at enhancing conditions of the built environment. With the growing regional and global interest in management systems – both at the building and information level – and the corresponding advanced hardware and software leading to the development of smart systems, Internet of Things (IoT) at the level of cities and buildings, we decided to venture into that exciting market and contribute to the area of space and building management using our computational concepts and approaches.

How does your product help architects, engineers, asset managers and owners?

Ayman Assem: BIMMUNITY aims at the core of its technology solutions not only to deliver smart or efficient management tools but rather to empower its users. As numerous stakeholders are involved in the management of the built environment, including architects, engineers, property and asset managers, facility managers, owners, service providers, BIMMUNITY is primarily interested in meeting and supporting the needs and objectives of all those concerned parties through enhanced scenarios of operation, automated workflows, performance monitoring and tracking, optimized management of building facilities and spaces, and informed real time decision-making.

BIMMUNITY utilizes state-of-the-art concepts of building information modeling (BIM), geographic information systems (GIS), and



database and server technology, to provide smart and real-time solutions, involving a variety of building types and stakeholders, within a fully integrated and customized platform. Our technology solutions range from managing not only spaces and buildings, but also communities and cities, using our flexible and scalable “city-to-room” services. Rather than a “one-size-fits-all” platform, BIMMUNITY’s fully customizable features address the needs of a wide variety of building types, including residential, commercial, educational, and mixed-use buildings, as well as stakeholders, including property holders, facility managers, service providers, and building tenants.

All stakeholders can navigate seamlessly through BIMMUNITY’s dynamic and user-friendly visual interface using its interconnected portals. Property holders can manage their properties worldwide and track income, expenses, and performances on their PCs or smart devices. Asset managers can work on enhancing the lifecycle performance of their assets through continuous tracking and monitoring of their performance. Facility managers can issue tickets and work orders to service providers and monitor all building systems and operations. Service providers can monitor their stocks and inventory and conduct their assigned work orders. Building tenants can visually navigate through their units and perform a variety of requests including services, bookings, and maintenance and operation requests. Architects and engineers can evaluate the impact of their design decisions while simulating scenarios of building operation for an improved and optimized building lifecycle. Using the analytical power of both BIM and GIS, all stakeholders can better understand the issues and impacts of their decisions. Other strengths include the support of data retrieval, tracking of component development and maintenance history, dataset availability for maximum on-demand use and recall, therefore supporting integration with other collaboration platforms.

USING THE ANALYTICAL POWER OF BOTH BIM AND GIS, ALL STAKEHOLDERS CAN BETTER UNDERSTAND THE ISSUES AND IMPACTS OF THEIR DECISIONS.

You wrote your dissertation on design intent communication in BIM-enabled architectural practice. What did you explore with your research and what have been your key conclusions?

Sherif Abdelmohsen: My dissertation was based on the premise of challenging the archetypal postulation that BIM encompasses all the required parameters and rules about a design product or process in a way that is comprehendible by all disciplinary

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participants sharing the model and that communicates their goals, needs and intentions, besides communicating design information. Typically, studies involving BIM in practice tend to overlook some of the socio-cognitive interactions that occur in the workplace such as the negotiation of meaning and the active participation of multiple communities of practice, indicating that there might be discrepancies between what is exchanged among participants as design information when sharing a building model and what is exchanged as goals, needs and possibly conflicting intentions and interests when sharing a common ill-structured problem.

An ethnographic study was therefore conducted based on the question: *what are the affordances and limitations that exist in BIM-enabled architectural practice in terms of communicating design intent among teams of designers working in interdisciplinary collaborative environments?* The objective was to identify if current BIM exchange mechanisms convey what design teams really intended, if critical design knowledge is not conveyed using BIM data exchange capabilities and authoring tools, how effective shared building models in practice are in terms of communicating product data, design decisions, tacit knowledge and expertise, and to what extent they are hindered by tool complexity, learning challenges, or other factors.

Using personas as an additional method of analysis, and grounded theory coding as a basis for analytic induction, the dissertation arrived at the following major findings and conclusions:

1. Affordances and limitations of BIM differ according to individuals, disciplines and communities. Affordances included ones related to the tool such as parametric flexibility, and affordances related to collaboration such as coordination of information and conflict resolution. Limitations included incompatibility among tools, the cost of 3D modeling for participants and teams, and conceptualization limitations;

2. The communication of design intent involves not only interdisciplinary interaction between architects and consultants, but multiple and overlapping communities of practice that embrace interdisciplinary, intradisciplinary and non-disciplinary interaction, in addition to emergent communities that develop along the course of a project;

3. The BIM model can be described in terms of states that denote the level of its completeness and correctness and describe how effective it is in conveying and capturing the intent of participants in the context of their practices and interactions;

4. The shared BIM model can be represented partially as a boundary object with different relative weights and meanings in each design stage and for each community of practice;

5. The BIM model presented an amplification of the participation and reification processes in the workplace, where multi-membership and mutual recognition among participants belonging to different and overlapping communities of practice augmented the sense of participation, while the model provided different values and levels of interpretation for members of different primary and secondary communities of practice through reification;

6. In principle, the BIM model as a shared repository of information and boundary object is assumed to take into account all participation and reification activities. However, in practice, the convoluted meaning making processes, and the goals, needs and intentions of multi-member communities entail much more interaction patterns that are not necessarily captured in current BIM systems;

7. The differences in multi-memberships, values of BIM for different members, participation and reification activities, and the structure of primary and secondary communities of practice, should all be accounted for in technology development efforts in the larger population of AEC firms and practices.

What is your opinion on the future of BIM. How will it develop and continue to change the industry?

Sherif Abdelmohsen: The AEC industry has only just scratched the surface regarding the potential applications and merits of BIM in practice. As experienced with earlier tools, concepts and methods, BIM will still have its ebbs and flows, but will however inevitably prevail as a significant lead component of mainstream practice, perhaps just in a different fashion. As with CAD, there will still be that sector of the industry that deals with BIM as a single piece of software – as opposed to a workflow or mindset – that executes specific CAD commands only more efficiently, the same way CAD was used as a more efficient alternate method to manual drawing.

On the other hand, more progressive firms and AEC practitioners will start to develop mechanisms of adapting rather than purely adopting BIM in their everyday practices. With advances in other parametric and digital fabrication tools, approaches to many of the phases in the design, construction and operation processes are expected to change. Developing scripts and smooth translations

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between different pieces of BIM software will allow for a more streamlined, efficient and informative design and analysis process, allowing for a richer and more comprehensive design solution space with multiple iterations featuring a vast amount of detailing regarding assemblies, spatial qualities, materials, etc.

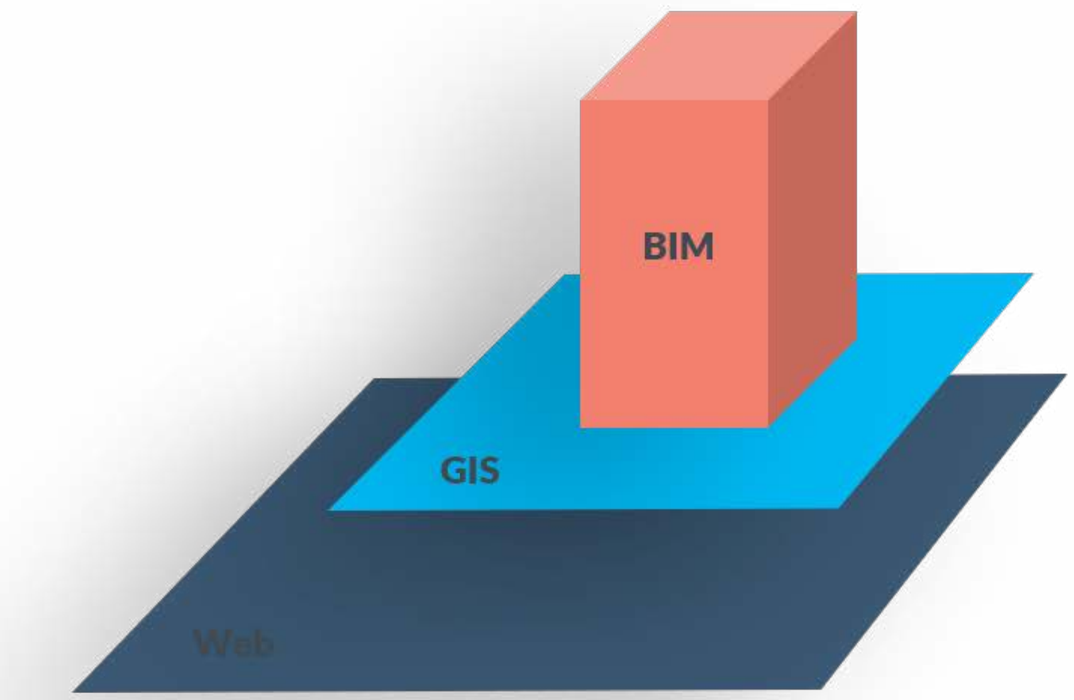
In my view, BIM will become so entangled into the profession that it will become harder for practitioners to even perceive it as unique or revolutionary. Advances in interoperability, artificial intelligence, Internet of Things (IoT) and smart systems will probably make the future less about BIM with respect to modeling and databases, but rather more about highly automated processes, tasks and workflows, advanced real-time performance simulations and optimizations, and highly integrated and efficient building lifecycle management.

IN MY VIEW, BIM WILL BECOME SO ENTANGLED INTO THE PROFESSION THAT IT WILL BECOME HARDER FOR PRACTITIONERS TO EVEN PERCEIVE IT AS UNIQUE OR REVOLUTIONARY.

To me, BIM will reach a point of saturation in the future with respect to its maturity and development concerning modeling and translation capabilities, to the extent that it will become part of standard practice, also similar to the early days of CAD/BIM transition. I think we are relatively close to this peak point, and it will be all about what's the next generation of BIM? Whether we will be dealing with actual generations of BIM, layers of maturity and development of BIM, or whether it becomes totally obsolete, is up for discussion, but what is most certain is that we will be witnessing soon a state of transition from BIM.

Will software algorithms and robotics drastically change the design/build process?

Ahmed Ibrahim: I think these are two of the main technologies that will revolutionize the design/build process. We have not come even close to realizing their potential. We have always been focusing on such tools in terms of an aid to the conventional design or fabrication process, mostly at the prototyping level. In other words, we have been developing scripts and translated design-to-production algorithms for predominantly conventional methods of design and construction. What if these methods in essence are revolutionized? What if we can actually program tools and scripts that would design and build for us from A to Z? Is that even a valid idea? Can we simply run a script and use a bunch of robots and drones to translate our thoughts, concepts and requirements into designs, structures and functioning operations?



BIM model

Full 3D navigation and visualisation – improved design documentation – live coordination - information take-off

GIS – Database

Relational database structure – geospatial analysis/modelling – scalability – positioning – server integration – integration with various FM tools (CAFM/IWMS/EDMS)

Web based – Applications

Real time task management/CRM – variety of interfaces – scalability - flexible access

A first shot at this thought would perhaps leave us confused, or relatively scared, especially when we realize that many of us as professionals could be jobless in a matter of a few years. While we take this thought with a grain of salt, it might strike us that we are not that far from that (virtual) reality. Existing developments in each of the fields of artificial intelligence, algorithmic design, digital fabrication, and robotic manufacturing reveals a closer look that might speak to the validity of such a wild idea. Yes, human designers will never be replaceable – well till now – but the truth of the matter is we are moving to more and more automated components of the design/build process, including conceptualization, modeling, optimization, fabrication and construction, and building operation and lifecycle.

Recent efforts in machine learning and heuristic methods are addressing the process of how human behavior and thinking can be utilized, captured and simulated to produce intuitive design solutions. The power of current graphical algorithm editors such as Grasshopper and Dynamo is already producing overwhelming results concerning conceptualization, geometric editing, parametric adaptation, and advanced simulation and optimization. BIM interoperability tools and techniques are making it easier for software tools to talk together and address issues of synchronized modeling, analysis and evaluation regarding cost, energy, construction and operation logistics. Robots and drones are already being used in some cases to build large scale on-site construction using automated scripting related to manufacturing and site logistics. 3D printers, previously used only for rapid prototyping, are now moving into a mode of rapid fabrication of custom non-traditional building blocks and new materials. Sensor networks, IoT and smart technologies introduce yet another layer of technology related to construction and operation which is specifically appealing to contractors, fabricators and facility managers.

In fact, this digital chain is already there but is not fully captured in its totality. The future might be much closer than we think!

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What is your advice for architectural offices which have not set up a BIM project strategy yet. What steps should they take?

Mohamed Ezzeldin: Apart from architectural offices that are not convinced with change to start with, many are willing to consider BIM in their practices but either have a false preconception what BIM is or are not fully aware of the ramifications of such a decision and what it entails in terms of the firm workflows, practices and logistics, and the accompanying implications, challenges, risks and obstacles along the road. Some other firms are willing to move forward with BIM but at a later stage when all issues are resolved and the process has become mainstream enough to learn, or when it results in a more intuitive design process and tool. In all cases, what is crucial is to first understand what it really means to adopt BIM in an architectural firm, which is not by the way just about hiring BIM software gurus, and purchasing and using the relevant BIM software.

WHAT IS CRUCIAL IS TO FIRST UNDERSTAND WHAT IT REALLY MEANS TO ADOPT BIM IN AN ARCHITECTURAL FIRM, WHICH IS NOT BY THE WAY JUST ABOUT HIRING BIM SOFTWARE GURUS, AND PURCHASING AND USING THE RELEVANT BIM SOFTWARE.

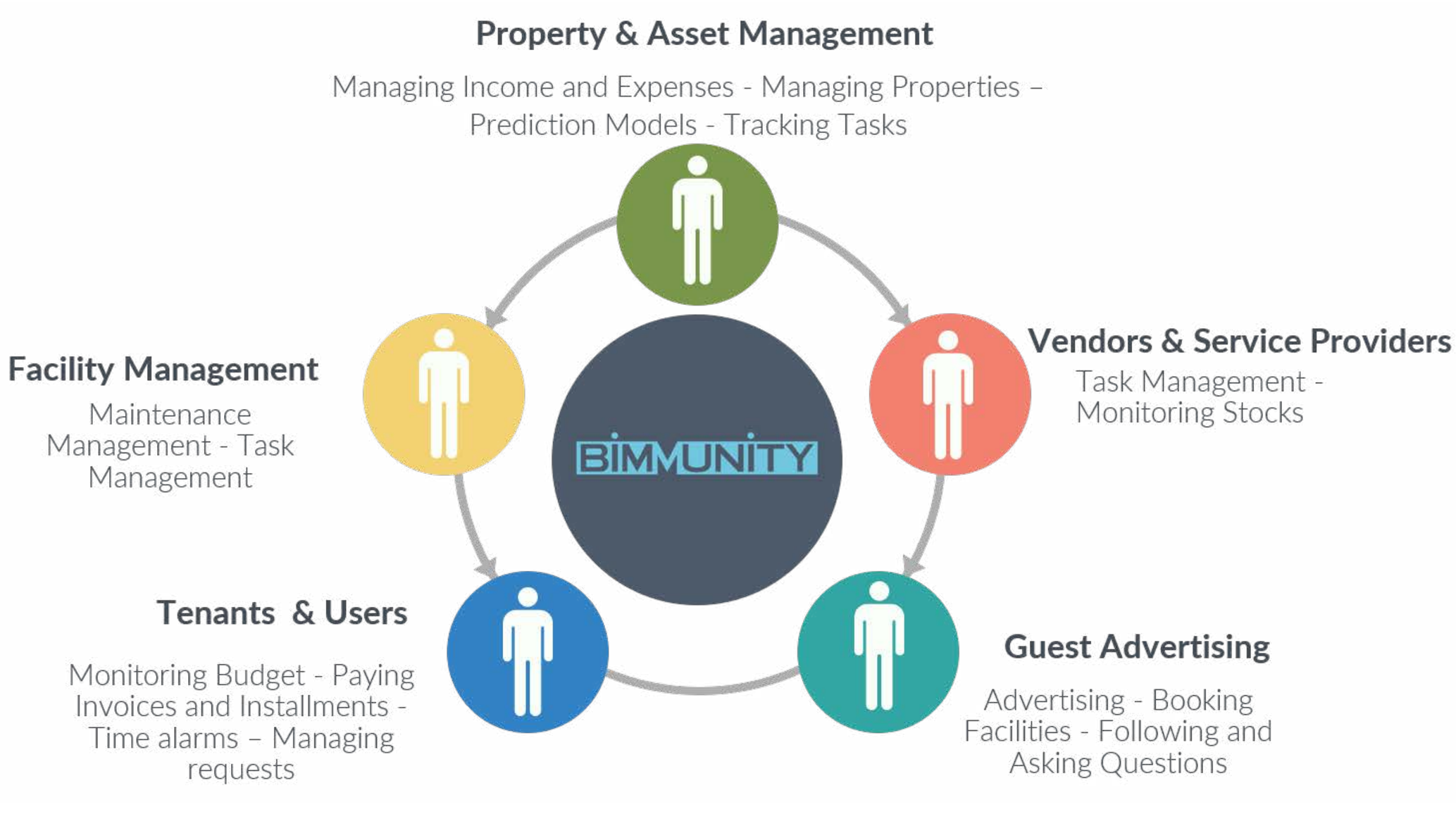
One of the issues that many firms face is peer pressure, where they feel obliged to follow the trendiest software out there or suddenly want to detach from the past or the traditional. This might result in hasty decisions by firm owners to purchase software just for the sake of following the crowd or expecting a fast return on investment, and hence they force their employees to use it with an eye always on investment in product rather than process, which is ultimately destined to fail.

BIM SHOULD BE EMBRACED AS BOTH A TOOL AND A PROCESS.

First of all, BIM should be embraced as both a tool and a process, so purchasing and implementing a specific BIM software such as Revit or ArchiCAD does not magically guarantee a full BIM adoption or experience. Second, what most firms should be considering in reality once the decision has been taken to adopt BIM – whether at the level of a single project or within the firm practices at large – is that what lies at the core of this adoption is transformation. Before purchasing the necessary software, it is all about the will to change; to transform in terms of mindset, thinking, workflow, process and collaboration. BIM was originally marketed as a business process, and yes it comes with endless merits and benefits, but what many do not realize is that what lacks in this package is the consideration of human dimension.

A multitude of issues are often not considered when adopting a BIM process or project strategy, including the work culture within the firm, workflows, mindsets, roles of different parties, and the nature of collaboration and communication within and among other disciplines. In essence, the adoption of BIM changes the nature of thinking, workflow and communication within a given project, and therefore the firm has to be conscious of these before moving to merely use any software. Implementation also typically requires a learning curve and a training plan for its employees, and this should be taken seriously. Other issues that need to be addressed before adopting a BIM strategy include the ability to manage transition and change, besides leadership, expertise and cross-generational dimensions.

Nevertheless, there are some myths and misconceptions surrounding the adoption of BIM practices. Some of these go as far as claiming that BIM is not suitable for design phases and designers do not benefit from it. Others address the drastic changes required in terms of project delivery, liability and legal issues, the changing role and responsibility of the designer, credibility of model information, besides the difficulty of handling all model information in 3D. In fact, many of these issues are exaggerated and can be considered obstacles to adoption. In many cases, the resolution of such issues can be easily dealt with better communication and through developing a shared system that addresses the nature of the desired workflow, communication method and model exchange format per project. In a nutshell, my advice is to consider and resolve first and foremost the social challenges and benefits related to BIM as a process within the firm then move forward with product-related issues such as software, model interoperability and other technicalities.



What are your plans and goals for BIMMUNITY in 2019?

Ayman Assem: Our goals for the development of BIMMUNITY as a smart management platform are endless. The current version of BIMMUNITY represents only the first phase of our ambitious project to develop a comprehensive building management platform. Our objectives for 2019 focus mainly on integrating our platform with an IoT framework, whereby our BIM and GIS databases become linked to real-time data input from the hardware equipment, sensor network and infrastructure of buildings, communities and cities.

Our platform initially targeted issues of optimization and efficiency of building operations primarily at the level of space management. Our aim is to incorporate energy management at the core of our extended platform, where real-time feedback from a building's equipment feeds into our energy analysis and management system, whereby data related to energy consumption, carbon footprint, and waste consumption and reduction is measured, monitored, and tracked to generate real-time results and sustainability reports regarding existing buildings.

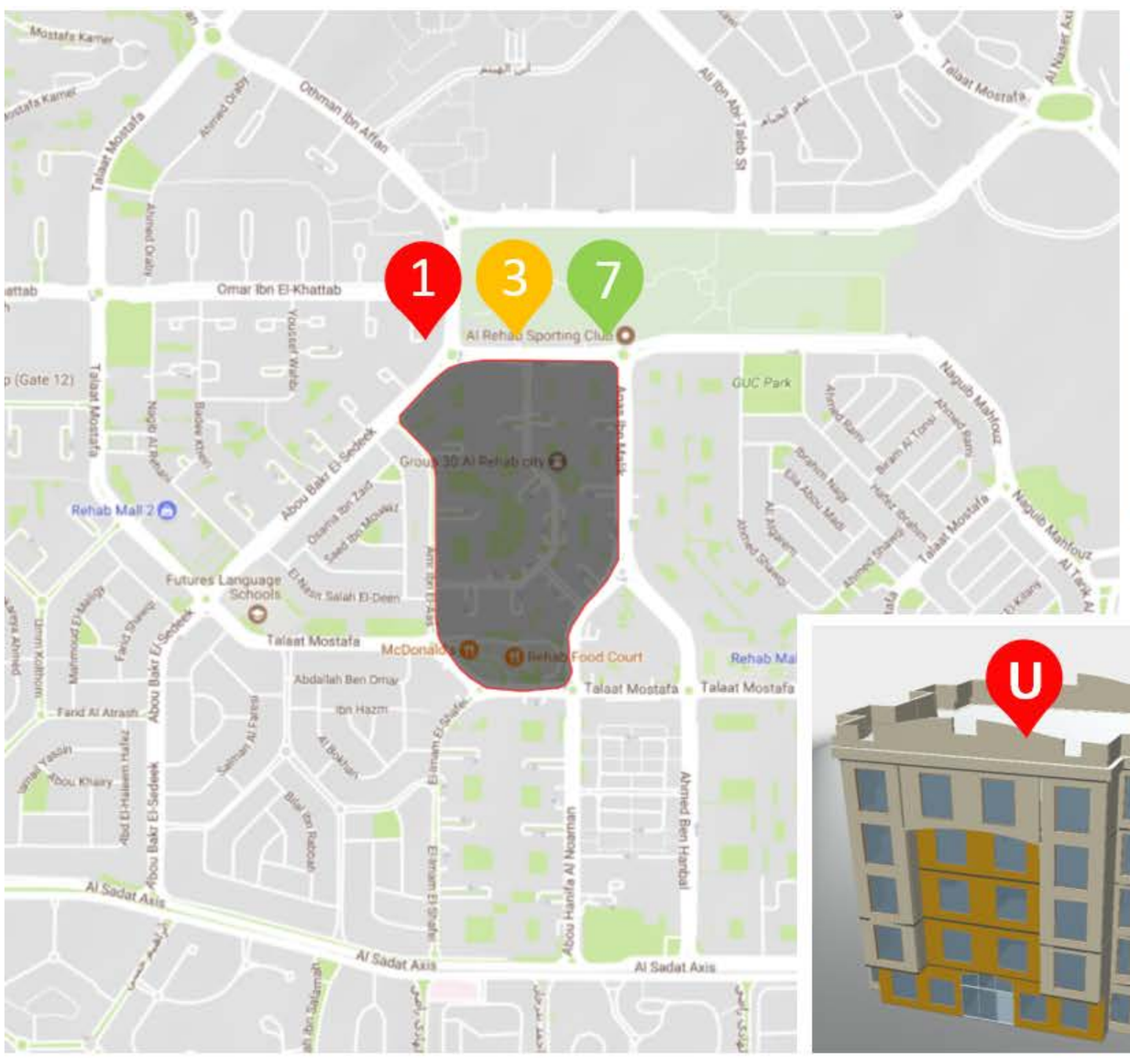
Currently, our system focuses on the smart building management of residential towers and commercial buildings. We intend to release versions of our platform that accommodate different building typologies. Our goal is to extend our platform to include educational buildings and hotels in the short term and more complex buildings such as hospitals and airports in the long term. Moreover, and in an effort to adopt a smart city approach, we intend to extend our platform to be more inclusive and customized, and to incorporate different levels of detail of management from spaces and buildings all the way to neighborhoods and cities.

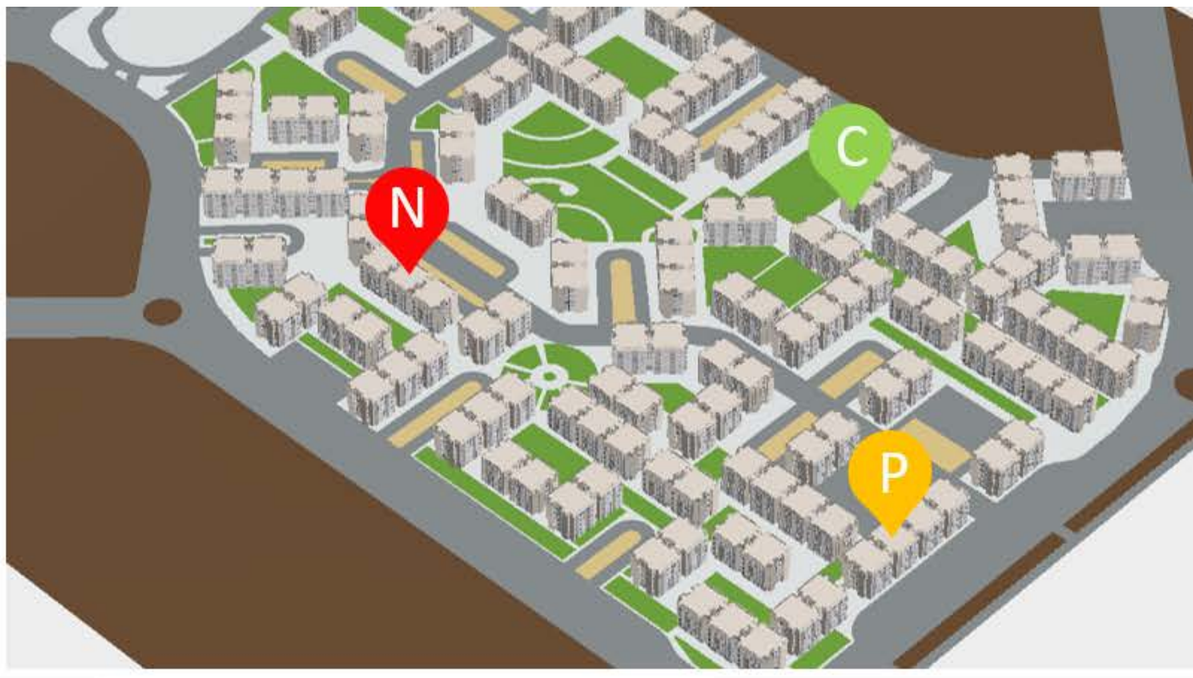
What are your thoughts on the future of architecture and the built environment? What are the major opportunities and what continues to inspire you?

Mohamed Ezzeldin: Architecture is currently at a crossroads that creates a unique opportunity for designers and all parties concerned with the built environment. We are now at a more mature phase; a post-digital post-parametricist era that sails away from the typical formalistic associations in the architectural discourse. From a computational design perspective, the imminent question for practitioners, educators and researchers becomes: how perpetual or ephemeral are the computational strategies, processes, and methodologies that will influence the thinking, knowledge production, formulation, and resolution mechanisms in the area of architecture, engineering and construction in the future?

As an increasingly loosely defined term, computational design is growing – past the conventional morphogenetic-centered perspective – to encompass a plethora of transformations in activities, strategies, and methods. A paradigm shift is forthcoming in the area of architecture, engineering and construction and is yet to be tested; from generative to performative and automated, from the tangible to the intangible, from the physical to the phenomenological, from experimental rapid prototyping to large scale rapid fabrication, from mass production to mass customization, from the artifact-centered to the human-centered, from top-down formalistic approaches to bottom-up informed decision making, planning and management, only to mention a few.

Along all these perceived transformations in the industry, yet another set of questions emerge; where does creativity lie? Where do visionary opportunities for genuine innovation stem from; from rich local contexts and authentic values and inspirations, or blind replicas of routine automated processes, settings and configurations? And how will digital design change the nature of architectural practice? What is really more interesting and intriguing within this dialogue is the changing role of the architect in the future. Despite the anticipated anxiety resulting from the expected diminishing role of the architect due to these transformations, it is my assumption that some of the major opportunities and inspirations for yet some unique innovative roles for the architect lie within these future transformations. —





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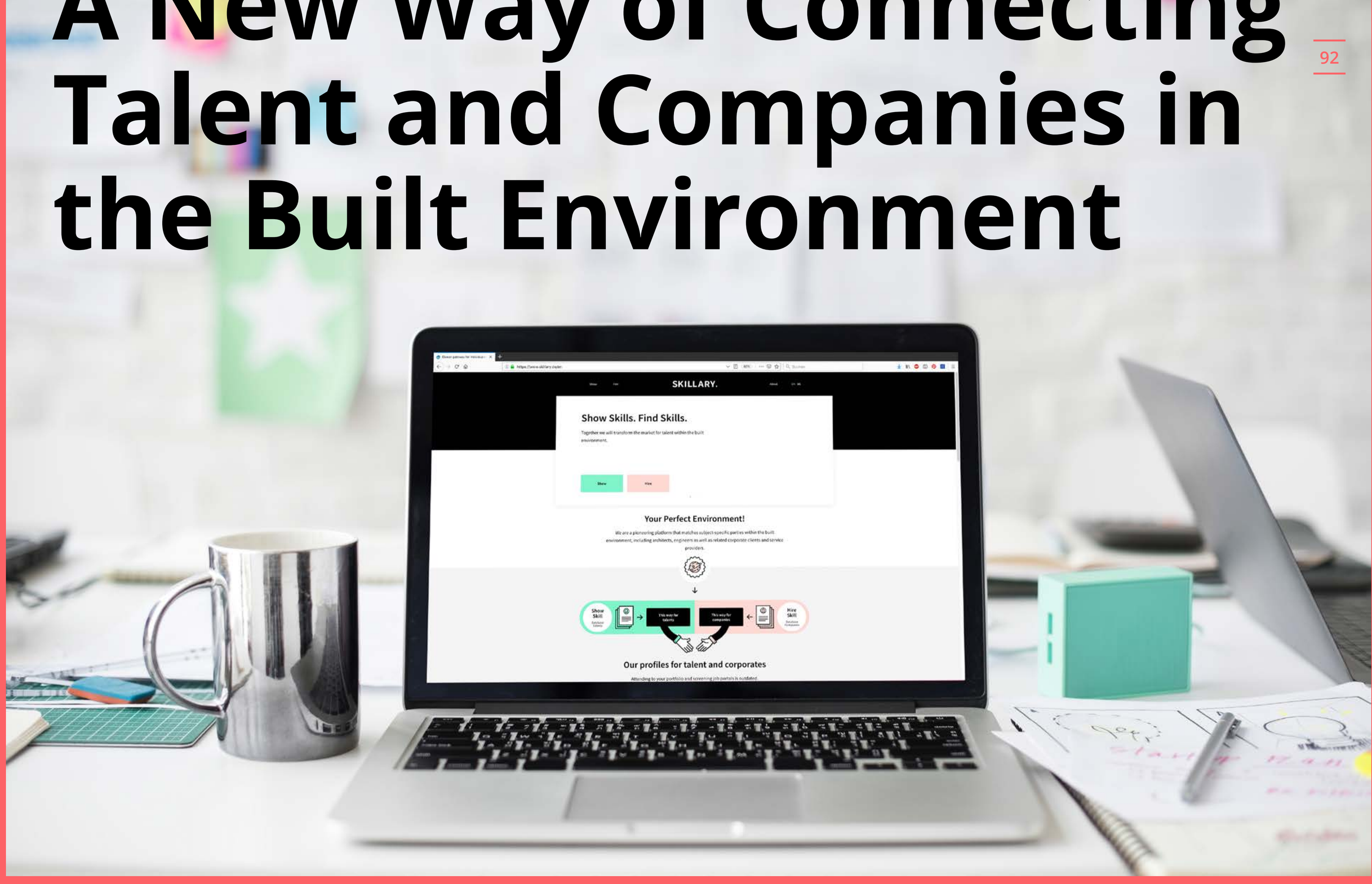
INTERVIEW WITH JULIA STÖCKERT, FOUNDER & CEO SKILLARY AND ANDREA KAISER, FOUNDER & COO SKILLARY

Outdated Job Market: A New Way of Connecting Talent and Companies in the Built Environment



ARCHITECTS AND CO-FOUNDERS JULIA STÖCKERT AND ANDREA KAISER SHARE HOW SKILLARY SEEKS TO MAKE BETTER CONNECTIONS BETWEEN TALENTS AND POTENTIAL EMPLOYERS IN THE BUILT ENVIRONMENT. ON SKILLARY, COMPANIES IN SEARCH OF ARCHITECTS OR ENGINEERS DESCRIBE THEIR COMPANY DNA WHICH INCLUDES THEIR VISION AND VALUES MOST RELEVANT TO POTENTIAL TALENT. CANDIDATES ARE MATCHED WITH COMPANIES ON THE BASIS OF THEIR EXPERIENCE, QUALIFICATIONS AND EXPECTATIONS FOR A FUTURE ROLE. SKILLARY CREATES A CYCLE IN THE APPLICATION PROCESS. FOR THE FIRST TIME COMPANIES CAN PROMOTE THEMSELVES ON THE TALENT SIDE AND VICE VERSA.

How did you come up with the idea of starting a digital platform with a focus on engineers and architects?

We realized that the status quo of the application and job search process for architectural or engineering related jobs has room for improvement, mainly in terms of generating relevant search results and leads. The majority of potential employers posting job vacancies do not find their desired talent audience in a systematic manner. We were discussing the shortcomings and challenges in this regard and tried to understand the opportunities for improvement. Naturally we looked into ways how to digitize this and make the entire journey more intuitive for both employers and candidates.

Aside from the basic submissions when looking for a job such as a CV, in our industry space candidates typically will spend (too) much time creating and updating a portfolio. Unfortunately, a creative portfolio will often give a potential hiring manager only a cursory overview or vague picture of your actual capabilities and relevant experience.

For employers, the process of finding a pool of skilled candidates with relevant skills can also be cumbersome. Typically, this involves researching by asking around in your professional network for suitable candidates, as well as looking to a social network. Most companies will post vacancies on their own company websites, sporadic job ads or carry out a dedicated search via

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headhunters (given a certain level seniority for the open role). Unless a candidate is approached by a headhunter directly (assuming headhunters know where to find top candidates), a candidate's active job search will be like looking for the needle in the haystack.

Talent within the built environment sector is no longer solely attracted to practice for its strong design and aesthetic sensibility. Today's top talent also expects an agile working environment which embraces new technologies and established, functional workflows for collaboration and knowledge sharing. No one is looking for a 9-7 cubicle job any longer.

JULIA STÖCKERT
FOUNDER & CEO SKILLARY

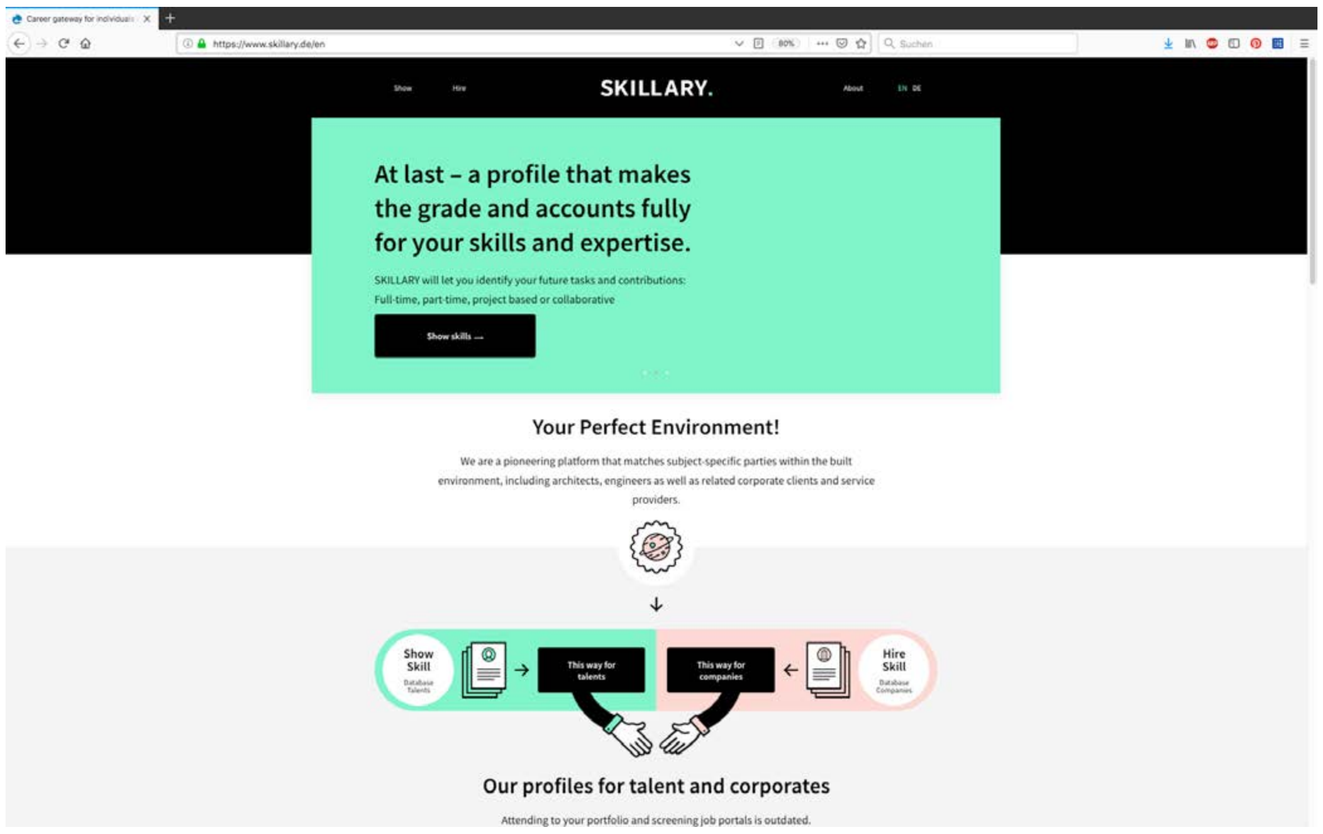
ANDREA KAISER
FOUNDER, COO SKILLARY

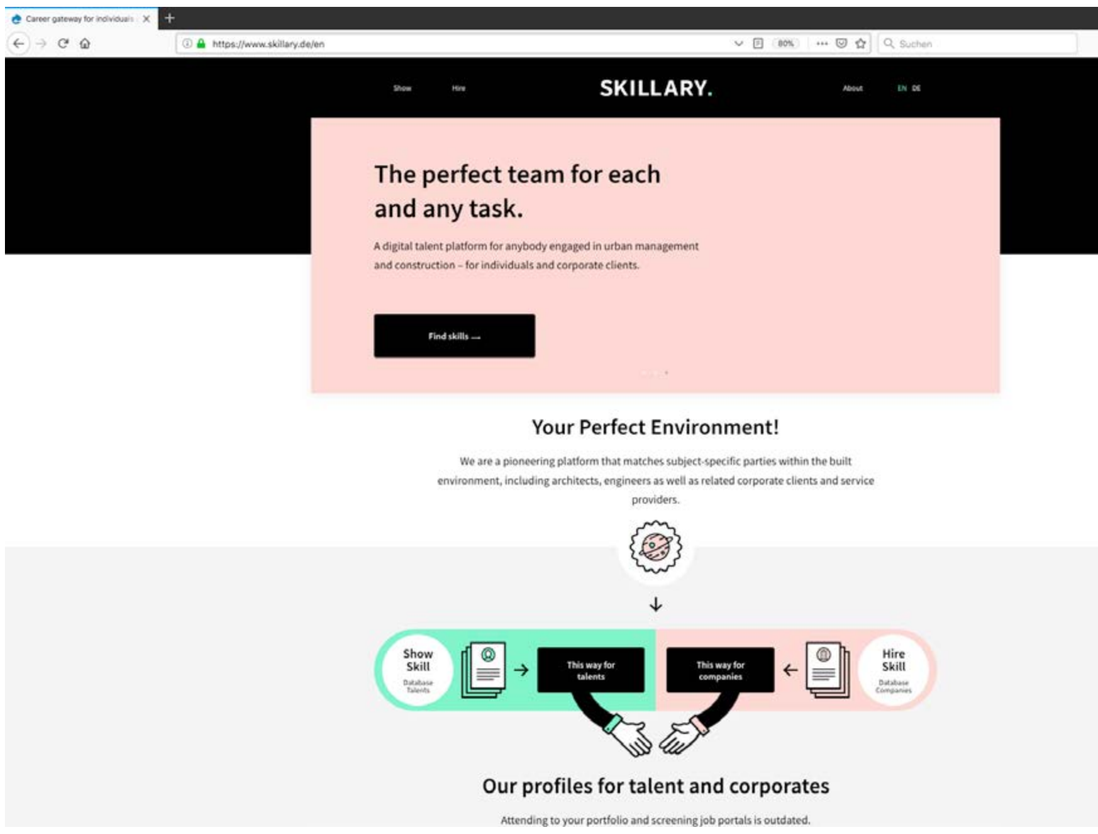
ANDREA KAISER AND JULIA STÖCKERT, BOTH ORIGINALLY FROM THE MUNICH AREA, MET ON THEIR FIRST DAY OF STUDIES AT TECHNICAL UNIVERSITY OF MUNICH (TUM) TO STUDY ARCHITECTURE. THEY WORKED TOGETHER CLOSELY ON VARIOUS PROJECTS AND ASSIGNMENTS, PARTICULARLY DURING THEIR TENURE AS STUDENT RESEARCH ASSISTANTS, WHERE THEY HAD VALUABLE EXPOSURE TO THE RESPONSIBILITIES AND CHALLENGES AROUND THE PLANNING OF LARGER SCALE BUILDINGS. ANDREA AND JULIA COMPLETED THEIR ARCHITECTURAL STUDIES AND GRADUATED FROM TUM IN 2011.

ANDREA THEN CONTINUED HER ACADEMIC CAREER AT TUM WHERE SHE WAS RESPONSIBLE FOR THE ORGANIZATION AND MANAGEMENT OF THE POST-GRADUATE MASTERS PROGRAM FOR *CLIMADESIGN*. SHE ALSO PRACTICED AS A FREELANCE ARCHITECT AND WORKED FOR OTHER ARCHITECTURAL OFFICES IN MUNICH WHERE SHE GAINED HANDS-ON SKILLS.

AFTER GRADUATION, JULIA STARTED HER CAREER AT ONE OF THE LEADING GERMAN ARCHITECTURAL COMPANIES WHERE SHE WAS ENGAGED IN INTERNATIONAL PROJECTS, MAINLY FOR LARGE INDUSTRIAL CLIENTS. THROUGH THAT PROJECT WORK SHE LEARNED FIRST-HAND ABOUT THE COMPLEX CHALLENGES OF LARGE PROJECTS AND HOW TO DEVELOP GOOD SYSTEMS, INTERFACES AND FRAMEWORKS TO IDENTIFY AND CONCEPTUALIZE SOLUTIONS. SHE ALSO CONTINUED TUM AS A TEACHING ASSISTANT, AND SHE BEGAN WORKING AS AN INDEPENDENT ARCHITECT IN 2016.

AT THE END OF 2018, ANDREA AND JULIA FOUNDED SKILLARY.





Can you tell us more about the process of creating and starting SKILLARY? What steps did you take?

We are very fortunate to have a great team of mentors and advisors who have continuously supported and encouraged us to follow through on this project. We refine our concepts, test various options along the way, remain open to the team's feedback and make changes as necessary to help our solutions and products evolve.

This thought process and system of feedback loops were very helpful to develop a clear, solution-oriented mindset and focus on the key barriers. It is one thing to develop a product; but to make sure that it has an actual market is of course paramount.

Why do you think the recruitment process in the building industry is broken?

Broken seems a bit harsh. We don't feel it is broken but rather feel that it is not yet digitized to a healthy extent. We conducted a survey in 2018 which showed us that merely 30% of all engineers and architects are listed on job or career portals. Clearly, active candidate sourcing via these portals will never lead to adequate results if 70% of the talent pool is in stealth mode. At the same time, our survey indicated that 90% of the same audience would list themselves if there would be a subject matter platform available.

In addition, companies have increasingly complex demands on the skills and abilities for new talent. A mere architect or engineer is no longer in demand. Today, companies are frequently in search of specialists for a certain assignment, with other adjacent skills such as relevant IT proficiency.

While recruitment agents and job portal services work to provide a digital product for job seekers and candidates to interact directly, quickly and efficiently, these platforms do not provide the special subject matter needs in order to be a real asset for our workforce and talent. For this reason, SKILLARY offers a new talent and tasks search feature. As a job portal focused specifically on our industry; we at SKILLARY understand that our sector is subject to constant change and reinvention.

Smaller firms with limited headcounts will often not have a dedicated HR person or department focused on traditional talent management and recruiting as well as on digital recruitment including the social media channels involved. Digitally linking architects, engineers and other professionals to potential employers is a great benefit to complement classic recruiting tools, if not substitute them entirely.

How would you like to develop the company in 2019?

By the end of 2019 our objective is to offer a fully developed platform that enables both candidates and employers to explore collaboration opportunities using an adequate user experience / UIX. We have successfully launched our MVP during the BAU2019 in January 2019 in our hometown Munich. From here we want to roll out into Europe, starting with Germany as a case study.

Do you have any advice for Archipreneurs who are interested in starting their own company in the built environment?

24/7 COMMITMENT TO YOUR VISION IS AS IMPORTANT AS YOUR FOUNDING TEAM.

When launching your start-up, have a plan A, plan B and plan C ready. Also, 24/7 commitment to your vision is as important as your founding team.

What are your thoughts on the future of the built environment? How can it improve, and what continues to inspire you?

Future projects will be digitized further in order to share learnings from completed projects. There will be many developments in this space and we are keen on being part of this journey. We hope that SKILLARY will contribute to this transformative phase of our industry. —

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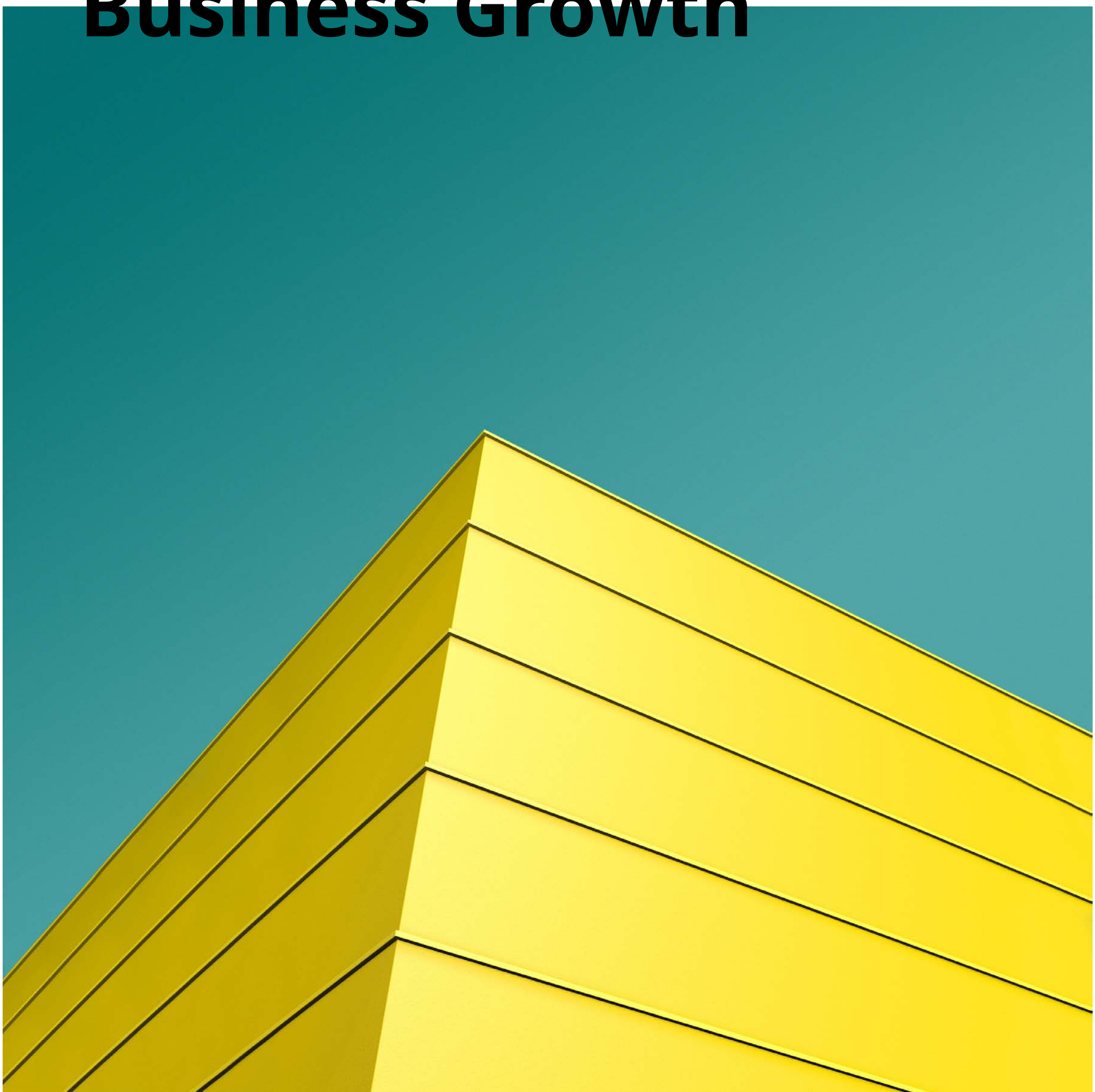
BY RAY BROWN & BEC KEMPSTER

Metrics for Success: How Architects Should Measure Business Growth



LEADING A SUCCESSFUL DESIGN PRACTICE DOES NOT GUARANTEE IT IS A PROFITABLE BUSINESS. DO YOU KNOW AND TRACK THE KEY METRICS TO EXTRACT MEANINGFUL, RELEVANT, TIMELY AND ACTIONABLE INSIGHTS TO OPERATE AND IMPROVE YOUR PRACTICE? IN THIS HELPFUL TUTORIAL, LEARN ABOUT THE QUANTITATIVE MEASURES OF A SUCCESSFUL ARCHITECTURE BUSINESS, AND BEGIN TRACKING YOUR GROWTH TOWARDS YOUR GOALS.

KPIs for Architectural firms: What metrics should you track in order to control your design business?

A Key Performance Indicator, or KPI, is a measurable value that demonstrates how effectively your design firm is achieving key business objectives. The key driver for utilising KPI reporting is to extract meaningful, relevant, timely and actionable insights that can be used to operate and improve your practice. KPIs provide trend information that is often absent from other forms of reporting.

Think of them as the numbers you'd like to know each week, or each month if you were basking in the sun on a remote, tropical island while your practice was being managed by others. The metrics that, even if you're at arm's length from the business, would provide you with reassurance that the business was in good heart.

There are two types of KPIs. The first is a lead indicator, which predicts what may happen in the future. For example, work secured in the month (but which may be delivered over two years), or the number of enquiries in a month which will be a barometer of future work.

A lag indicator points to what has happened in the past, such as revenue or profit in a month. It provides an indication of what happened after the event. Look to include a mix of both lag and lead indicators in your reporting.

When setting up your KPI report, we recommend you include data from the previous twelve months as this will immediately allow you to chart whether your practice performance is improving, or is poorer than the previous period.

Whilst KPIs can vary for different practices, there will be six to eight numbers that will give you a good indication of the health of your business.

Financial Metrics

Revenue is the first and probably the most obvious number your practice should be tracking. For most architectural practices, this will be the value you bill each month.

The second number is the margin in the business. Revenue less directly associated costs (such as staff salaries, printing fees and other project related expenses) will give you the margin. It can be a number, but is most often stated as a percentage of revenue.

The third financial metric you should be tracking in your firm is the level of expenses each month, stated as a number. Some owners may also like to pull out salaries as an additional metric, as for many practices this will be the largest monthly expense. >

The next obvious metric is profit. Whilst you could turn to the Profit and Loss Statement for these figures, it won't provide you with an indication of the how this number varies over time.

Most practice owners will be aware of their cash in the bank at the end of the month, however if you were asked what the cash in the bank was three or six months ago, there is far less likelihood of recalling this. Tracking this number in a KPI report can reveal seasonal trends, such as the months each quarter when tax payments might be made. This will allow you to forward plan to accommodate for these events.

Debtors and creditors are the final two numbers to add to your financial metrics. By deducting creditors from your debtors and adding the cash at the bank, you'll have a balance sheet snapshot of the short-term liquidity of the business. That is, what you'd be left with (or possibly owe!) if you shut up shop today.

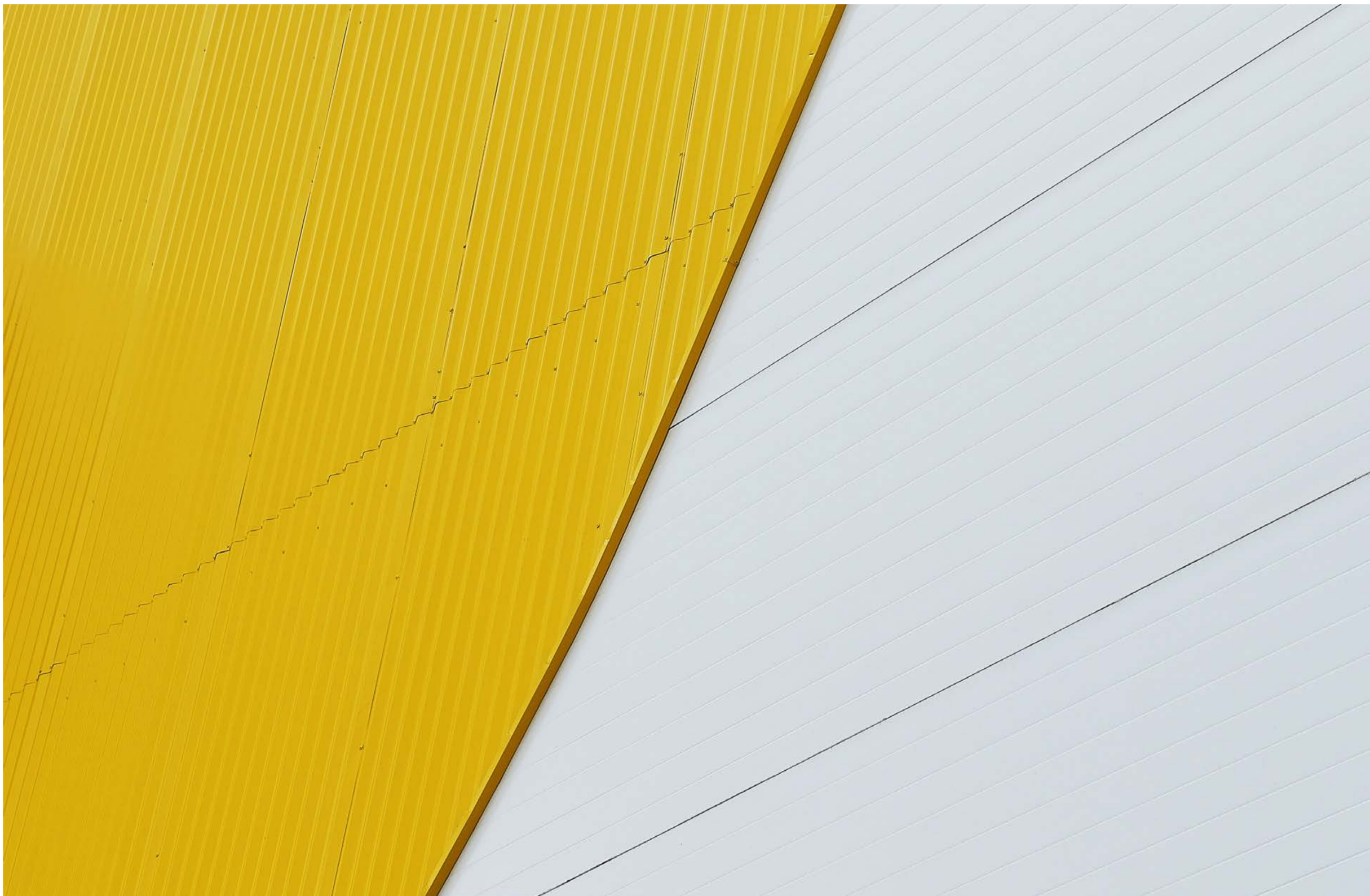
These KPIs begin to tell the real story when tracked together in one simple report or spreadsheet, over time. By marking any losses or negative numbers in red, you'll easily be able to identify any downturns when reading across the report.

Sales & Marketing Metrics

In our experience, we find the pain point verbalised by most architects is a projection of when the work will 'dry up'. For example, that there's only enough work to the end of June.

Having this information and forward commitment from clients is empowering. Put yourself in the position of a retailer. They don't know who's going to come into their store tomorrow, let alone next month. Knowing the workload of the coming months allows you to manage the pipeline of new business so that you're hitting your financial KPIs and importantly, managing allocation of your team and resources.

To assist you in managing your pipeline of new business, we recommend the first metric you



track is the number of enquiries received in the month. Because architects typically get so few new enquiries as opposed to other industries like law firms or advertising agencies, this is a reliable lead indicator of future work. You will quickly be able to determine an average number of enquiries per month and take action should the number drop below this average in any particular period. This metric is the best indicator of the success of your marketing activity, referrals and general awareness of your practice out in the market.

The next metrics will allow you to assess how effective your client engagement process is in converting enquiries or 'leads', to prospects. These are, the total value of proposals submitted in the month and the number of proposals. By tracking both these, over time you will be able to measure your average proposal value (total value of proposals divided by number of proposals) and track whether this is rising or falling.

You should also be tracking total value of live proposals as part of your suite of sales KPIs. That is, total proposals issued up until the date of reporting that are awaiting a response from the potential client. You should include two numbers here; both the number of proposals issued and the value of those proposals issued in the month. This metric is a good motivator for following up with potential clients to establish whether they are going to proceed with the project.

These numbers will allow you to assess the spread of future potential work. You don't want to find your firm in a position where you're reliant on only one or two overly big proposals.

The best lead indicator for design firms is work secured in a month. Work typically takes most firms eighteen months to two years to deliver, so if your practice is consistently winning a satisfactory level of work each month, you will be close to guaranteeing that you'll still have a profitable practice operating in two years' time. Not many other industries have this level of security in their business.

The final metric we suggest you track in relation to sales is the total value of unbilled work in progress. For this KPI, take all the work that you have on your books in the month and calculate the portion of the total project value that's left to be billed. At Archibiz, we refer to this as a 'sleep at night number' as it can help alleviate any uneasiness about the work 'drying up'.

A KEY PERFORMANCE INDICATOR, OR KPI, IS A MEASURABLE VALUE THAT DEMONSTRATES HOW EFFECTIVELY YOUR DESIGN FIRM IS ACHIEVING KEY BUSINESS OBJECTIVES.

This is a fear we regularly hear about from architects. Being in business is not just about delivering the work, it's about bringing the work in. Investing focus, time and process into building a robust sales pipeline in your firm, will help shift your mindset from a place of unfounded fear to confidence and comfort.

That robust pipeline will result from implementing a basic marketing strategy that is executed consistently. This marketing strategy should include a content rich website that is updated regularly and social media activity. For those design firms that have this in place, you should be reporting on at least the following marketing metrics:

1. Unique visits to your website
2. Social media interactions such as comments, likes and shares
3. Number of marketing activities occurring on other people's channels, such as articles, blog or social media posts

Frequency for tracking KPIs

We recommend tracking these KPIs on a monthly basis, as a rule of thumb, as quarterly won't >

forewarn you in adequate time to act on a negative trend. On the other hand, you may find yourself bogged down in the numbers if you try to track them on a weekly basis.

That being said, cash flow is a metric that is worth reviewing on a weekly basis. Cash in the bank at the end of the month can hide liquidity concerns taking place within the month. Take the example of the practice that pays wages on the first of the month, or even the 15th, but doesn't receive payment on invoices until the end of the month. We recommend reviewing particular KPIs, such as cash flow, in line with the operating processes unique to your firm.

Even if you don't utilise the KPI at this point in time, by keeping this list of metrics in your KPI report, you will be able to perform analysis on these at any point in the future with ease as you'll have a historic record of the data.

Reporting on these KPIs presupposes that you have good bookkeeping processes and financial management in place in your design firm. It assumes that you have established systems and processes in place for delivering the product. Ask yourself, are you putting work out efficiently? Do you know when projects are running over budget? Have you got a six month plan in place for delivering the work that matches the right resource with the appropriate jobs?

Avoid surprises

The risk of not regularly reviewing a set of KPIs in your design firm is surprises. Being 'busy' isn't a reliable indicator of long term sustainability, particularly if your operating processes aren't optimal.

It is much more difficult to respond late in the piece to a negative trend that was established over a period of time. The earlier you receive a warning signal and can act, the easier it will be to take action to revert the situation.

Likewise, KPIs give you a reason to celebrate the good times, something we tend to forget. There's more to celebrate than just landing a big win. For example, we used to be here and now we're somewhere better. Or our average monthly work secured is now 20% better than in the previous year. >

Above all, KPIs are about providing you with peace of mind. To understand that your practice is going in the right direction rather than relying on a gut feeling or worse still, putting your head in the sand and praying for the best.

Achieving control in your design firm

Though our lives are renowned for unpredictability, we as individuals crave a sense of control. The reality is that we don't always have total control, particularly over external factors such as market forces or over other people, such as whether an employee chooses to remain working in our business.

Achieving true control is an unrealistic mindset that will only serve to keep us in a place of fear.

A more realistic goal to strive for in your role as 'Director' or 'Owner' of a design firm (as opposed to your role as 'the architect'), is awareness. Being aware of trends through a set of KPIs will allow you to shine a light on the world of greyness you find yourself operating in as Director or Owner. It's important to focus on understanding the levers in your business as opposed to achieving a feeling of control. —

RAY BROWN

CO-FOUNDER OF ARCHIBIZ

RAY IS A BUSINESS COACH AND ENTREPRENEUR WHO HAS WORKED IN THE UK, SOUTH AFRICA AND THE US. HE OPERATED AT CEO LEVEL FOR OVER 25 YEARS BEFORE RELOCATING TO AUSTRALIA IN 2005.
RAY'S PASSION IS HELPING BUSINESS OWNERS TO REALISE THEIR PERSONAL POTENTIAL AND THAT OF THEIR ORGANISATION.
HE HAS COACHED A NUMBER OF ARCHITECTURAL PRACTICES IN MELBOURNE, AUSTRALIA ALL OF WHOM ARE NOW THRIVING AND PROFITABLE ORGANISATIONS.

BEC KEMPSTER

CO-FOUNDER OF ARCHIBIZ

BEC IS A BIG BELIEVER IN THE BENEFITS WE ALL STAND TO GAIN FROM COLLECTIVE LEARNING. AS THE HEAD OF AN ASSOCIATION ADVOCATING FOR EMERGING TECHNOLOGIES, SHE IS ACUTELY AWARE OF THE CHANGES IMPACTING ALL BUSINESSES IN OUR SOCIETY AS A RESULT OF THE INDUSTRIAL REVOLUTION 4.0 AND IS DRIVEN BY THE DESIRE TO PREPARE BUSINESS OWNERS FOR WHAT'S NEW NEXT.
BEC HAS OVER TWELVE YEARS OF EXPERIENCE IN MARKETING, SPECIFICALLY DIGITAL AND BRAND STRATEGY, INCLUDING HOLDING THE ROLE AS CLIENT SERVICES DIRECTOR & HEAD OF STRATEGY FOR A DIGITAL AGENCY.
BEC HAS ALSO SPENT TIME AS A PROJECT MANAGER WORKING ON RETAIL FITS OUTS WITH TWO MAJOR AUSTRALIAN RETAILERS.

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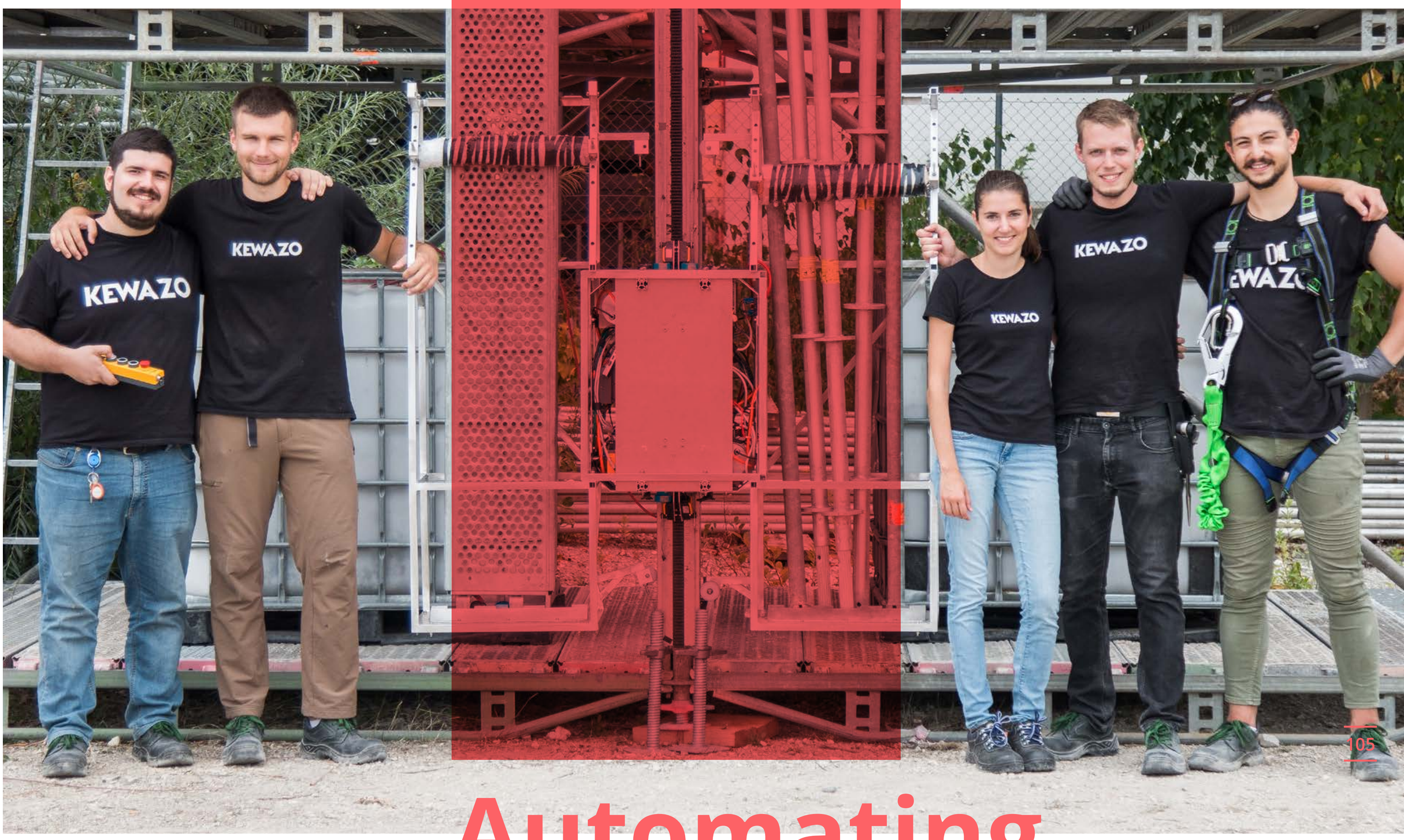

Automating Construction: Improving On-Site Logistics through Robotics and Data Analytics

INTERVIEW WITH ARTEM KUCHUKOV, CEO & CO-FOUNDER KEWAZO

KEWAZO WORKS TO IMPROVE ON-SITE CONSTRUCTION LOGISTICS THROUGH ROBOTICS AND DATA ANALYTICS. THEIR FIRST AUTOMATION OBJECTIVE IS TO EQUIP CUSTOMERS WITH THE TOOLS FOR SAFE, FAST AND SMART MATERIAL TRANSPORTATION ON CONSTRUCTION SITES. CEO AND CO-FOUNDER ARTEM KUCHUKOV DESCRIBES HOW KEWAZO GREW THE IDEA FROM CONCEPT TO WORKING PROTOTYPE WITH NEW CUSTOMERS EAGER TO IMPLEMENT INNOVATIVE HARDWARE ON SITE.

How did you come up with the idea for KEWAZO and what is your core product?

We studied opportunities for automation in construction. For example, Japanese companies in the 1960s and ‘70s tried to create fully automated construction sites with so called “on-site factories”. These projects failed because they were too ambitious—they tried to do too much at the same time.

Several Japanese companies then tried to automate single activities on site instead, such as painting. Painting for instance requires a far simpler approach compared to the automation of a whole construction site. As expected, focusing on single aspect of the construction process was more successful. We learned that this approach still holds true today. It is better to concentrate on single topics of significantly lower complexity compared to full job sites, but the single topics should still be somewhat challenging in terms of automation.

The problem on construction sites is that you need to account for a lot of human creativity in the moment. Robots are moving in pre-programmed ways, which is hard on a messy construction site. When thinking about using robots on construction sites today, there needs to be some sort of structure in which, or upon which, the robot would move.

For this reason, my former classmate and current co-founder Leonidas Pozikidis and I thought about scaffolding as about a structure to provide more opportunities for on-site automation. With the idea to automate scaffolding assembly in mind, we attracted four other co-founders with very different backgrounds and specialties including business, software and hardware.

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ARTEM KUCHUKOV
CEO & CO-FOUNDER KEWAZO

AS A PRACTICING CIVIL ENGINEER SPECIALIST IN RUSSIA AND THE US, ARTEM KUCHUKOV UNDERSTOOD THE CHALLENGES AND NEEDS OF THE CONSTRUCTION INDUSTRY FIRST HAND. IN 2017, HE REFINED HIS KNOWLEDGE IN THESE AREAS BY COMPLETING A MASTER'S DEGREE IN ADVANCED CONSTRUCTION AND BUILDING TECHNOLOGY FROM THE TU MUNICH, WHERE HE OBTAINED A COMPREHENSIVE OVERVIEW OF THE HISTORY AND GROUNDING PRINCIPLES OF ROBOTICS IN CONSTRUCTION.

IN 2016, ARTEM CO-FOUNDED KEWAZO WITH A TEAM OF SPECIALISTS AND GRADUATES BASED IN GERMANY.

By networking and researching the scaffolding industry, we learned that the major problems of scaffolding assembly are safety, labor shortage and inefficiency.

We learned that transportation during scaffolding assembly is the bottleneck of the process. Around 80% of the total assembly time is spent transporting parts from the storage place on-site to the assembly point, so we knew that improving transportation on site would already make a big impact. Proving that we could successfully resolve a known issue like minimizing transport time would give us a foot in the door of the industry, and the opportunity to implement more automation with further solutions.

To cut down transport time, we started on working on a two-dimensional robotic elevator, which provides vertical and horizontal transportation during assembly. We have since shared our concept for this solution with leaders in the industry and we have received a very positive feedback. And by listening to our potential customers, we have even learned that a simpler version of the solution –an automated vertical transportation solution– would already provide enough value for them compared to existing conventional solutions.

Our current goal is to bring robotic elevators on-site, which will move in one or multiple directions and transport materials

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ROBOTIC ELEVATOR TECHNICAL PROTOTYPE

“YOU SHOULD NAME THE SYSTEM ‘FROM 16 TO 65’. TODAY, MOST OF MY WORKERS CAN ONLY WORK UNTIL THEY ARE 40 OR 50. AFTER THAT, THEIR BODY WEARS OUT SO MUCH THAT THEY ASK ME TO MAKE THEM CONSTRUCTION MANAGERS OR AT LEAST LORRY DRIVERS, BUT I CAN’T MAKE EVERYBODY DRIVERS OR MANAGERS. YOUR SYSTEM CAN GIVE MY WORKERS AN OPPORTUNITY TO WORK SAFE AND HEALTHY UNTIL THEY ARE 65.”

in safe and efficient way. The robots should assist workers and make their work easier and safer.

One of our potential customers even said: “You should name the system ‘from 16 to 65’. Today, most of my workers can only work until they are 40 or 50. After that, their body wears out so much that they ask me to make them construction managers or at least lorry drivers, but I can’t make everybody drivers or managers. Your system can give my workers an opportunity to work safe and healthy until they are 65.”

In what development stage are you in right now? Did you already produce a prototype?

» We have built the first technical prototype of our robot to run first field tests. It performs on a certain level but does not reach all the goal parameters set off on the final system yet. On the basis of this prototype we were able to sign letters of intent for preorders with our first customers.

Right now, we are building a pre-series product which we plan to finish in the first quarter of 2019 and which should be certified in the second quarter of 2019. As an equipment manufacturer, we must follow European machine directives which means before we are able to have people working with the product on a daily basis, we need a certification.

Who are your target customers?

Our targeted customers are sub-contractors in the area of scaffolding assembly. Generally, we have two focus areas: construction and industry servicing.

In construction, our customers are mainly scaffolding assembly contractors. In industry servicing, they are industrial service providers. These companies usually maintain facilities in the process industry, which includes chemical, petrochemical, gas, oil and power plants.

How did you go about finding clients at first?

The best way for us to reach out and to find potential clients is to attend industry events. We found our first clients at these events. One major advantage was that we are the first company focusing on automating scaffolding, which gave us a lot of attention throughout Germany and from around the world.

In 2018 you closed a €1M seed round. Could you tell us more about the process of raising venture capital for your startup?

There is no universal way of raising venture capital. It is important that you check standard marks which investors focus on for your first investment. Things like a good team, a good product and having a patent and IP. Try to reduce the number of red flags and do your homework that you can do before you reach out to investors.

It is also important to understand the focus areas of the investors you are talking. You should research the companies in their portfolio to see if your company would be a good fit. It is also worth considering at which stage they typically invest and if this fits with your staging.

Be open to feedback and ready to adjust your idea based on the feedback you get. It is important that you show your openness, learn from feedback and integrate it in your company building process.

BE OPEN TO FEEDBACK AND READY TO ADJUST YOUR IDEA BASED ON THE FEEDBACK YOU GET.

Generally, you should reach out to as many potential investors as you can and be ready to often get refused. You need to understand that it is often about internal factors of the investors and not only about your idea and company.

Raising capital is a very long process which you should start at least 6 months before you need money and constantly network.

How many people are you at your company today?

We are 15 people at the moment: 10 full-time and 5 working students.

Do you have any advice for Archipreneurs who are interested in starting their own company in the built environment?

The most important thing is to build a solid network early. Also, don't be afraid to share and talk about your idea. An idea alone is worth nothing. Execution is everything. Be open for feedback and do not be offended if you get critical feedback. Make mistakes quickly and also adapt quickly, adjust and move forward.

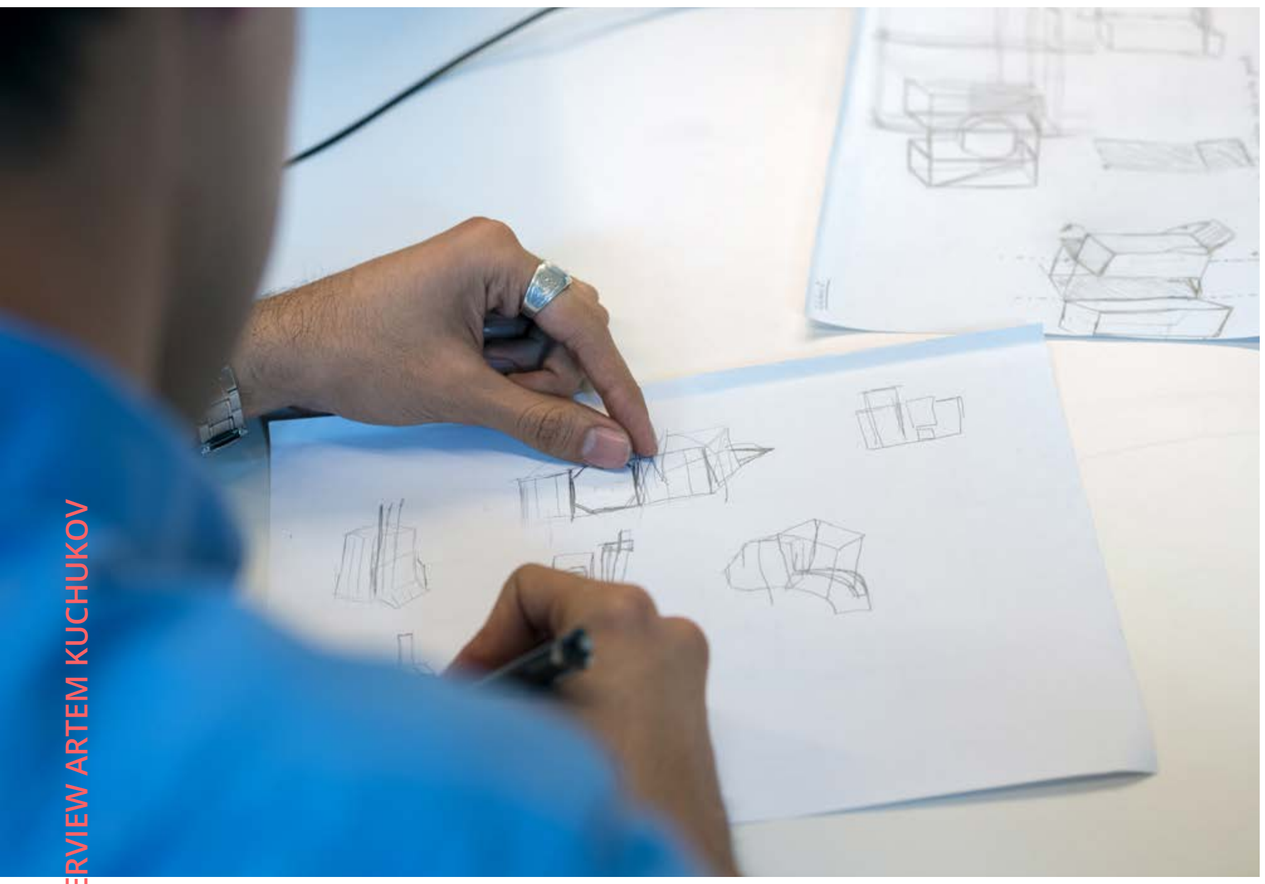
THE MOST IMPORTANT THING IS TO BUILD A SOLID NETWORK EARLY.

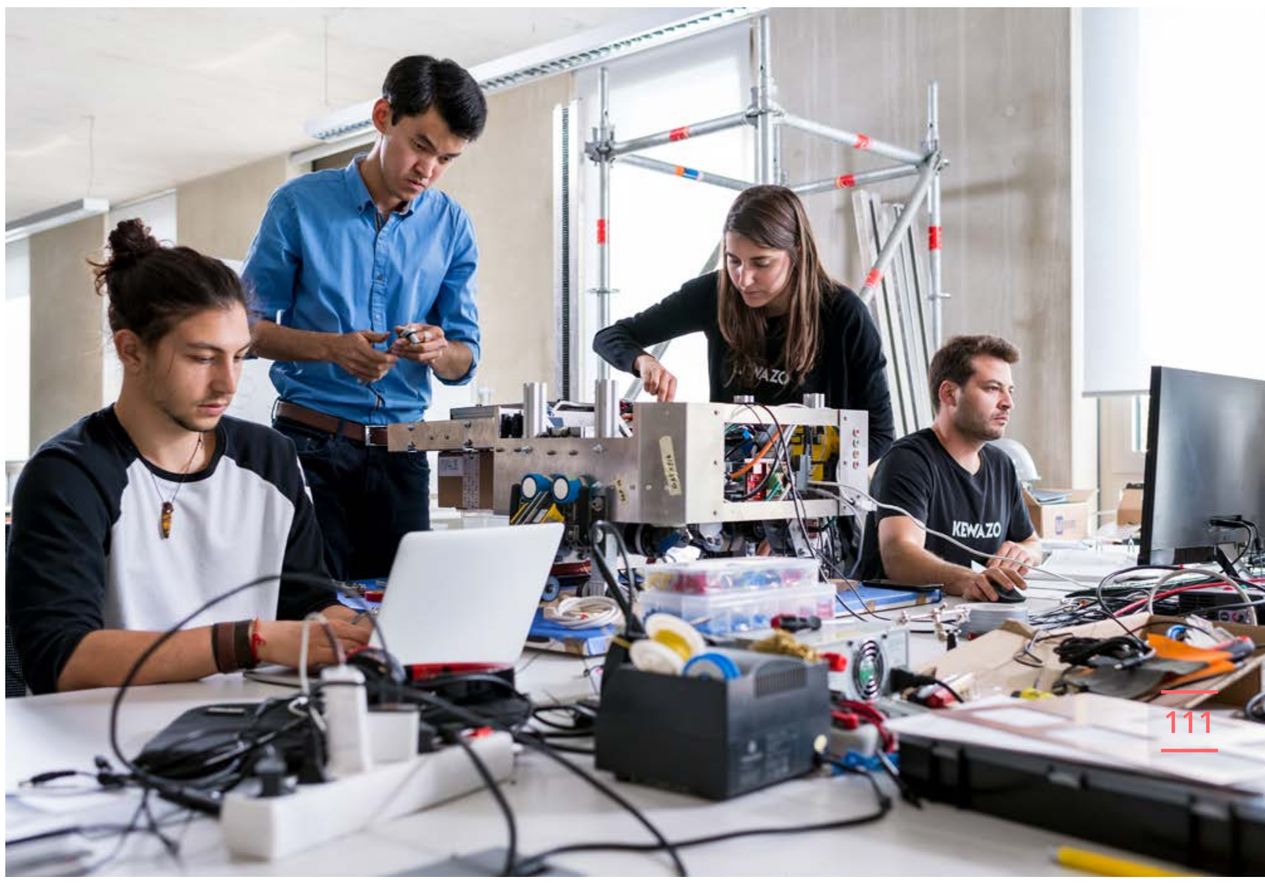
What are your thoughts on the future of the built environment? How can it improve, and what continues to inspire you?

I think that the construction industry is going to be disrupted soon. It will start in software and then progress to hardware because software will be easier to set up. However, a friend from a large construction software company once said that new software is focused on organizing today's chaos of construction sites and its process. New hardware will eliminate the majority of this chaos

>

by establishing new processes. Where software can be seen as a painkiller that focuses on consequences, hardware advances can be a solution that cuts to the heart of the problem by getting rid of it at all. This will lead to much higher productivity rates than conventional solutions. I think that robotics and data analytics we will be the two focus areas where the most innovation that will change the way how we understand construction sites will happen in the next years to come. —





CLOCKWISE:

1: ALIMZHAN RAKHMATULIN, HEAD OF MECHANICAL ENGINEERING AND CO-FOUNDER OF KEWAZO, IS DRAFTING A CONCEPT

2: THE ASSEMBLY PROCESS OF THE TECHNICAL PROTOTYPE

3: LEONIDAS POZIKIDIS, HEAD OF ELECTRICAL ENGINEERING AND CO-FOUNDER OF KEWAZO, IS MANUFACTURING PARTS FOR THE TECHNICAL PROTOTYPE.

what do you think?

THANKS FOR READING ARCHIPRENEUR INSIGHTS.

WE GREATLY APPRECIATE YOUR SUPPORT AND INTEREST. IN ORDER FOR US TO CONTINUE TO IMPROVE THE RESEARCH AND PROVIDE THE BEST CONTENT POSSIBLE FOR YOU, WE ASK THAT YOU TAKE THIS SHORT SURVEY AND GIVE US YOUR FEEDBACK.

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