

What does innovation mean in the Nordic context? The ideas changing the way we live, big or small, share a red thread – whether they're coming from a huge multinational like H&M, a niche start-up with a vision to connect the world, like Mapillary, or even a beauty brand challenging the corporate norm. "It's about equality, it's about fairness, it's about humanity," replies Simon Caspersen, the co-founder of IKEA's external ideas lab, SPACE10, when asked what characterizes new thinking in the north. Those shared values have been around long before tech start-ups and the circular economy – and it's likely that whatever the new ideas to come, those values will still lie at the core of Nordic innovation.

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TO THE
FUTURE,
TO THE
NORTH



SPACE10: IKEA'S INNOVATION LAB CREATING A BETTER LIFE FOR THE MANY

In the heart of Copenhagen's vibrant meatpacking district, nestled amongst a labyrinth of white functionalist buildings is SPACE10 – the IKEA-funded 'future-living lab' that might just help solve some of the biggest problems facing society in the next 10 to 20 years. Unlike many innovation labs, SPACE10 doesn't work towards its backer's core business goals – in this case furniture solutions for IKEA. Instead, the hub aims to address the major societal trends that will change the way we live in the future, from rapid urbanisation to a scarcity of natural resources. A team of 30 tackles these global challenges through innovative forms of food, technology and architecture from the confines of a huge, three-floor open-plan building that hosts exhibitions, talks, screenings and parties, alongside workspaces, an in-house farm and a kitchen manned by a chef-in-residence.

"Innovation is a creative exercise and it's about shifting perspectives. We are trying to see patterns in the chaos," explains Simon Caspersen, director of communications at SPACE10, who co-founded the ideas lab together with Carla Camilla Hjort, Guillaume Charny-Brunet and Kaave Pour. The initiative has set out to tackle three major themes since its inception in 2015: 'circular societies' looks at the development of a sustainable economy, 'coexistence' examines how to design enriching spaces in

expanding urban centres, and 'digital empowerment' encompasses forward-thinking projects like Do You Speak Human? which explores the potential for conversational interfaces (think Apple's Siri or Amazon's Alexa) to provide humans with meaningful interactions.

So, how does it work? The lab offers residencies where professionals ranging from artists to architects come together to collaborate. Four specific labs tackle key focus areas, from AI possibilities and reimagined cities, to open source architecture and The Farm – SPACE10's own small but impressive food production unit tucked away in the basement. Dedicated to the "urban food problem", The Farm finds ways to sustainably produce food in atypical environments. "We grow 100kg of food a month," explains Caspersen. "The majority of this consists of micro greens, which are micro forms of vegetables with the same nutritional value, but grown more quickly and sustainably." The Farm consists of a hydroponic system – which uses sensors, artificial lights, machine-learning and computerised automation to ensure plants are given the exact amount of light, water and minerals that they need – as well as an aquaponic system, a circular cycle in which plants are fertilised by fish waste from a fish tank below, with the fish benefiting from the water that seeps through the plants' soil.



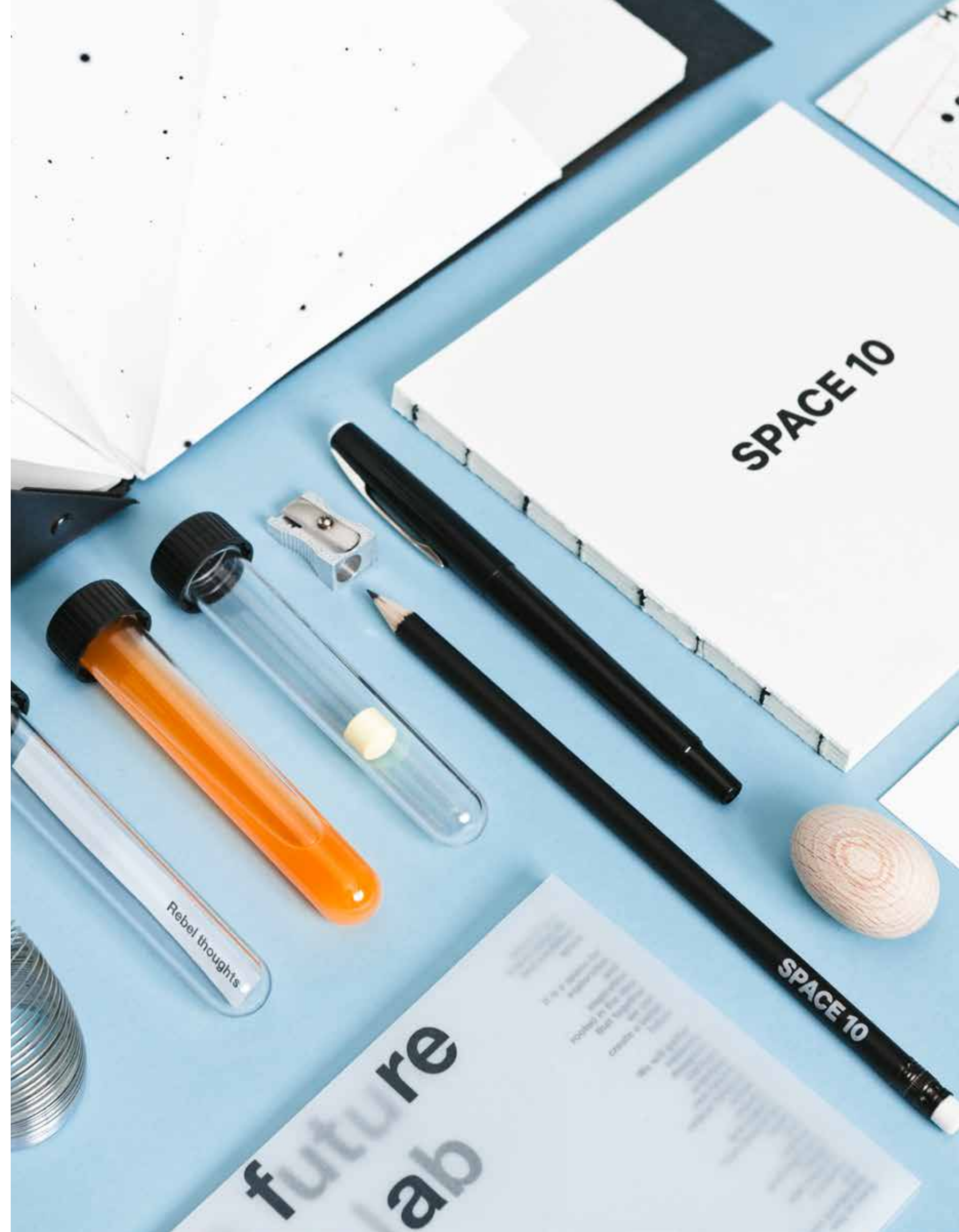
That in-house research evolved into a hydroponic garden that launched as part of SPACE10's Exploring Spaces of Tomorrow pop-up at the London Design Festival this year, where curious attendees could drop into a Meet Your Greens workshop.

The concept of "playful research" is woven throughout all of the projects at SPACE10 – in 2015, tackling humanity's reliance on meat led researchers to reinvent that IKEA restaurant stalwart, the Swedish meatball. Eight sustainable alternatives were developed for the next generation, from the 'lean green algae ball' and the '3D printed ball' to the 'crispy bug ball' which, as its name suggests, is concocted from insects.

The Growroom, an open source urban garden designed by SPACE10, became a global hit on its release this year. The simple spherical garden is made from plywood, and key to its success is an open source design that allows anybody, anywhere to download the digital file and use a laser cutter to cut the plywood according to size and design. More than 20,000 people around the world have downloaded the blueprint and submitted photos of their own personal Growroom online. "It is completely democratised manufacturing," says Caspersen. Indeed, what differentiates the research hub from other ideas labs backed by brands, is a determinedly transparent approach in an economy that is often anything but. "A lot of innovation takes place in top-secret

places," he points out, "but we really believe collaboration beats competition." The Algae Dome, which debuted at the recent CHART Art Fair in Copenhagen, was another Instagramable showcase for the SPACE10 ethos, with a four-metre pavilion built from 320 metres of coiled tubing that produced microalgae, a nutritionally dense superfood that reduces carbon dioxide and purifies the air.

But the Copenhagen-based lab is about more than just solving the big problems of our day – there is also an aspiration to create an entirely new set of shared beliefs, and a thriving creative working culture. "We're an interface for innovation. What attracts a lot of people across the world to come here for residencies are those values of trying to create a better everyday life for the many," says Caspersen, referencing IKEA founder Ingvar Kamprad's original mission. With myriad ongoing projects cropping up from London to Shanghai, a continuous stream of talks and festivals featuring cutting-edge researchers and speakers, it's clear that SPACE10 is taking its idealistic research mandate seriously. As we finish up our tour of the vast space, Caspersen offers up the words of another futurist prophet, author William Gibson: "The future is already here, it's just not evenly distributed." If SPACE10 has anything to say about it, one day the future might be available to us all.



NUORI: NORDIC CLEAN BEAUTY

For a business to be relevant today, they need to take ethics and sustainability seriously – and the beauty industry is no exception. Danish skincare brand Nuori is the brainchild of New York-based Finnish founder, Jasmi Bonnén. Her "Aha" moment came when she learned about the expiry dates of skincare products while working at L'Oreal as a product and marketing manager. When she started to research the chemical stability of cosmetics, Bonnén found studies that showed active ingredients like vitamins begin to lose their beneficial properties just months after blending due to oxidation. She also discovered that products with long shelf lives have synthetic preservatives added to them - and with an industry standard of a 30 months, that's substantial. "When I realised there was a need for a fresh skincare line, I quit my corporate job and took the terrifying leap into the life of an entrepreneur," she says. "I basically took on the challenge no one else would and built a whole business around 'fresh.'" She started Nuori in Denmark in 2015, specialising in whipping up small batches of fresh skincare products every 12 weeks, each with a 'start' and 'use by' date. Today Nuori has a cult following and is sold in over 20 countries. By challenging the corporate norm, Bonnén has helped develop a new kind of beauty standard. If that isn't disruptive, what is?





SAS: FLY ME TO THE CUBE

It is a rare thing to hear a person get excited about airline food — you're more likely to instill a sense of fear and trepidation at its very mention. But Scandinavian Airlines (SAS) is taking a defiant stance with The Cube, a design-led innovation that promotes a few Nordic ideals: be practical, less wasteful and give the individual autonomy. Part of the wider global trend towards intelligent packaging, the new onboard dining experience comes as a cubic packaged meal that removes the hassle of mile-high eating, with a compartmentalised set of local and seasonal Scandinavian foods. "We tried to find a smart solution between travelling and consuming, and to give the customer the opportunity to eat or do whatever they actually want," says Kristine Mayer, product design and communications manager for SAS. "It's about giving the passenger back more control." Passengers can

opt out of more food, cutting down on the amount of food waste on planes. The design embodies that quintessential Scandinavian aesthetic, all clean lines and structured shape, and the emphasis is placed on the region's bountiful nature, in both the design and the food served (think mushroom and pine-flavoured bread or fennel marinated fjord salmon). The hand-drawn graphics pay homage to lands that produced the very meal they contain, be it the sweeping Danish coastline or towering Norwegian mountains. And while it's just a small example, The Cube exemplifies an attention to detail and interest in innovative solutions that characterises Nordic culture. "Scandinavians love to travel and are always coming back with new perspectives, which is a great foundation for innovation," says Mayer. "To change the world, you have to see it."

MAPILLARY: STITCHING THE GLOBE TOGETHER THE CUBE

In an age of increasing global mobility, knowing where we're going and what it looks like is crucial. But instead of waiting for somebody else to put a location on the map, what if you had the power to do that yourself? Malmö-based startup Mapillary seeks to do just that; their platform for street-level imagery gives the user control of the locations and images that should populate their digital map. "We collect imagery across the world," explains Jan Erik Solem, co-founder and CEO of Mapillary, "and we take those images and stitch them together across users and across time — we build an alternative to Google Street View." Founded by a small team of four in southern Sweden — now a team of 33 with offices across the globe — Mapillary has created a global community of users who upload their own images, which are then used to create a whole picture of that location using computer vision. Currently the site has 150 million images, from volcanoes in Costa Rica and the Polynesian archipelagos of Tonga, to frosty Antarctica and Pokhara in Nepal — many of these remote places are being photo-mapped for the first time.

"We make our data available for other people to use," says Solem, explaining how Mapillary differs from its competitors. "Individuals, cities, mapping companies

and automotive companies all use our images and locations." A mathematics professor at Lund University, Solem first found success with his last startup, facial recognition company Polar Rose, which he sold to Apple in 2010 for approximately \$25m. Mapillary embodies much of what we have come to expect from a Nordic company at the forefront of innovation — inherently democratic in its approach, it's helping to benefit and empower the public. Whereas traditional mapping companies rely on updates every few years with vans trundling through major cities, Mapillary instead has a global community of advocates that map anything from a main thoroughfare to their local hiking trail. "We do it bottom-up where we let anyone contribute with any hardware they have, and then we can achieve scale," says Solem. "We're approaching the problem from a completely different perspective. We're building a model of the world in 3D." By relinquishing control of what gets mapped, where and by whom, Mapillary's progressive approach characterises the best of 21st-century technology. "We are opening up the possibility for anyone to be creative around data," Solem points out. Depending on how we want to see the world of tomorrow, it might be time to get our cameras out.



H&M: A CIRCULAR WORLD

The global population is rapidly growing and whilst that means a number of things, generally speaking more people also means more clothes. "The fashion industry is facing its biggest challenge ever: how to produce clothes for a growing world population while protecting the planet," says Erik Bang, project manager for the H&M Foundation, an external non-profit organisation that drives change in two key areas – the environment and education. This immense challenge is the great modern-day battle for fashion the world over, but how to solve it? Well, the Swedes might have some thoughts. And while fast fashion doesn't immediately spring to mind when one envisions sustainability, nevertheless, the Swedish retailer has managed to stay a step ahead – whether that's announcing their ambition to become climate positive by 2040, or working towards their goal of using purely recycled and sustainable materials by 2030. In that vein it's not a surprise that the H&M Global Change Award is one of the world's largest innovation competitions, with a total of €1m in grant money. The award is unique for celebrating early-stage innovations that push the fashion industry into a circular and environmentally conscious direction.

"Whilst there are many great initiatives in the industry, we believe the transformation is not happening fast enough," Bang says. "The circular economy is an urgent opportunity for both planet and the industry and we want to speed up that shift. A competition is a great way of telling the world about the demand for game changing innovation. It also engages the public, since everyone has a relationship to fashion and the planet." The Global Change Award celebrates ideas that have yet to hit the market, and it's at this crucial stage where H&M Foundation can help. The accelerator programme provides a grant (ranging from €150,000 to €300,000), alongside hands-on coaching and access to the industry. Notably, and in true Scandinavian fashion, the winners of the award have complete autonomy over their ideas. "H&M does not take any ownership, so it all comes with full freedom in order to maximise impact in the shortest amount of time," Bang says. Recent highlights include 100% citrus and orange fibre clothing, a textile fabric made out of cellulose from cow manure, vegetable leather made from wine industry leftovers, and vending machines that rent out clothing. "We need to innovate at the edge of our imagination," Bang enthuses. And with H&M's ambition and capacity to reach some of the brightest innovative minds from around the world, they may just crack the million-dollar question and find a solution to the challenge of the century.

