

**Around half of the habitable land on the planet is now used for agriculture. A millennium ago – or more recently, in the case of many countries – it was mostly wilderness. Soon, technology could reshape that balance again, bringing back acres of trees as tools to fight climate change. A new project from the global design firm Stantec looks at how ancient forests and other ecosystems could come back, through “rewilding”, if we produce food differently.**

**Adele Peters – Fast Company**

**Singapore is upskilling its workforce through government-organised workshops, known as the SkillsFuture Advice programme. The program offers attendees access to more than 400 courses, mostly conducted by institutes of higher learning (IHLs), giving them a chance to develop their education, training and job prospects.**

**Liana Hasnan – THE ASEAN POST**

**Learning in the flow of work is a new idea: it recognizes that for learning to really happen, it must fit around and align itself to working days and working lives. Rather than think of corporate learning as a destination, it's now becoming something that comes to us. Through good design thinking and cutting-edge technology, we can build solutions and experiences that make learning almost invisible in our jobs. One could argue that Google and YouTube are two of the earliest “learning in the flow” platforms, which we now take for granted.**

**Josh Bersin – Harvard Business Review**

**For organizations, this is a significant opportunity to encourage their teams to embrace a learning mentality and lean into upskilling as a way to get through these challenges. Business leaders need to encourage and adopt a growth mindset in order to build this culture among their teams. And again, it all starts with teaching skills related to change agility. The future of learning is not only going to transform the future of work, but the conventional way of learning and education as well.**

**Emily He – Forbes**

**In a world that's rapidly changing, what's high performing one day might be low performing the next. If we aren't accelerating performance improvement, we'll likely find ourselves falling further and further behind. What if we could cultivate a new set of practices that not only improved performance, but accelerated it? And not just once, but over time. The answer: We'd get better, faster.**

**John Hagel – Co-Chairman, Deloitte Center for the Edge**

**Traditional education mostly teaches inductive reasoning (from examples to rules) and deductive reasoning (from rules to conclusions). Inductive and deductive reasonings work well in well-defined environments. However, business is far from a well-defined environment. We have incomplete information in a highly complex system. Abductive thinking is actually most suited for such situations. It is a combination of inductive and deductive. It looks at an incomplete set of observations and helps create the most likely explanations (hypotheses).**

**Alen Faljic – Beyond Users**

**Every one of our businesses are in the same place. The acceleration of change is shifting everything from the way we manufacture to the way we communicate with our customers. If you think you're immune contemplate what changes will happen in a few years when all of us will have 3D printers in our homes and can manufacture almost everything we need to consume. If you're focused on running an efficient manufacturing company 3D printing has the potential to radically affect that. We sometimes forget that while it's great that so many of the things in life are getting cheaper a component of all of our incomes is based on the cost of living. If we're radically saving money it seems logical that there's a potential for our own incomes to go down and the global economy to shrink.**

**John Winsor – Forbes**

**One click printing is slowly becoming more of an achievable goal. Until now, the knowledge that is needed to run a job in AM is very high. This is becoming a bottleneck as the number of highly skilled engineers that can run machines at near perfect rates is unable to keep up with the needs. However, the trick to achieving one-click AM revolves around knowledge of the process and the ability to transfer this into scalable software solutions. This knowledge is growing by the day, and we can see the automation within software starting to bring us closer.**

**Joris Peels – 3DPRINT.COM**

**The 21st century is hopefully going to go down in the history books as the era of sustainable economy. With greater urgency for environment protection action, I believe that companies, communities and countries will rewire their policies and programmes at scale to protect the planet and people alongside their need for profits. Jobs that drive this sustainable way of life will therefore be at the centre of the 21st century and will grow in millions. Technology and tech companies will advise, create and enable these new jobs in the intersection of climate change and public services as well as consumer products.**

**C. Vijayakumar – World Economic Forum**

**Distributed work, digital tools, and the effects of AI are not new forces, but rapid acceleration has amplified their benefits and imperfections. With fewer geographic constraints and a more diverse contract workforce, companies can more easily improve intellectual, socioeconomic, and demographic diversity. Yet an AI-driven future may also find companies quantifying metrics around individual productivity or value, contributing to a hyper-monitored, ratings-driven workforce.**

**Rob Girling – Forbes**

**This “just-in-time” real estate model means companies and workers may choose to work at one of thousands of locations worldwide on a full-time, part-time or a pay-as-you-go basis. And that means people will pay only for what they need, when they need it. As such, companies that are reimagining their spaces also must invest in technology to keep track of these moving parts. This intelligence will better help organizations understand what portion of their portfolios is best suited for long-term committed space vs. flexible, just-in-time space – all the while providing a sense of place for their employees.**

**Richard Barkham – CBRE**

**Thanks to technology and the rise of the highly skilled knowledge worker, telecommuting has advanced in recent years to where many workers see the world as their office. They are increasingly moving fluidly between offices in different cities, between client sites and every airport, hotel, coffee shop and Uber in between, ultimately taking the opportunity to work from a place of choice that is more convenient to their personal life when their schedule permits.**

**Richard Barkham – CBRE**

**The New Imperatives of Corporate Location. But the location decisions of high-tech, knowledge-based firms turn on a different set of factors. The driving factor is access to highly educated and skilled people. This new location model is shaped by the simple fact that such talent is heavily clustered and concentrated in certain places. This is particularly true of young talent which is central to knowledge-based industries like finance, media, entertainment and hightechnology and which is drawn to places which offer a combination of abundant job opportunities, deep professional networks, and lots of other young people to make friends with (and date).**

**Richard Florida – Harvard Business Review**

**By 2030, buildings will quickly and flexibly respond to the demands of those who occupy them. They will be more intuitive to user needs – more “human” – and will deliver personalized experiences that support our increasingly ondemand lifestyles. Innovations like artificial intelligence (AI), self-driving cars, next-generation mobile technology and continually growing e-commerce will accelerate the transformation of how real estate is used and traded.**

**Richard Barkham – CBRE**

**The biggest change has been technology. And it has given “the office” a serious identity crisis. The physical environment used to serve as the place where workers engaged one another, carried out work process and stored the tools and files necessary to be productive. Technology has, in most ways, replaced the physical environment with a virtual one that can be accessed anywhere. It’s the differentiator that is providing that workplace flexibility. And because of that, tech is a much greater dependency for people today than a physical workplace.**

**Richard Barkham – CBRE**

**Broadband speeds of more than one gigabit per second will become a reality with 5G technology – without the need to dig up roads and connect fiber to homes. So-called fixed wireless access will lower the cost of installing broadband, and those costs will fall further as more households take up the service.**

**Visualgraphic – Goldman Sachs**

**For the first time in history, four generations will occupy the workplace simultaneously. By 2030, Generation Z (those born after 1997) will occupy a third of the workforce. But they'll have lots of company in the three generations that preceded them. Across the globe, baby boomers are living longer than previous generations and they're retiring later in life – in 10 years, the youngest of them will be in their 60s and likely still working.**

**Richard Barkham – CBRE**

**An eco-friendly approach will attract the brightest talent. An organisation's sustainability agenda is becoming as important, if not more so, as its bottom line. While profits will always remain a priority, increasingly stakeholders and employees expect a measurable commitment to sustainable best practices.**

**Pantea Tehrani – raconteur**

**In recent years, consumers have become more wary of where and how they purchase in an effort to be more sustainable and ethical. And, perhaps, the recent increased attention on the improvement of our planet's health owing to worldwide lockdowns has encouraged this further.**

**Rachel Bell – Wundermann Thompson**

**According to Snøhetta's estimates, Powerhouse Brattørkaia will produce more energy than it consumes over the course of 50 years. That factors in the embodied energy in the materials used to construct the building, and the construction and demolition processes themselves.**

**Suzanne LaBarre – Fastcompany**

**Becoming planet-centric isn't only good for the planet – it's untapped opportunity for business too. Re-orientating organisations towards having greater planetary purpose can differentiate their offering from others, attract the best employees, expand business into new areas, help take advantage of digital opportunities, change culture, as well as contribute to a more sustainable world. This is the thing: it's a win-win. The planet-centric revolution has to happen, otherwise everyone loses. What kind of legacy do you want?**

**Kathrin Dimai & Joana Casaca Lemos – Impossible**

**Sustainable finance and corporate responsibility have become strategic topics for financial institutions as clients' expectations are increasingly shifting towards green and sustainable products. As a result, key players in the financial industry are incrementally enhancing their offerings and commitments related to sustainable finance. Corporate responsibility**  
**In addition to the sustainable finance regulatory wave, corporate responsibility topics, such as environmental and human rights, due diligence, and diversity, have been at the top of the regulatory agenda.**

**Ecofact.com**

**The 21st century is hopefully going to go down in the history books as the era of sustainable economy. With greater urgency for environment protection action, I believe that companies, communities and countries will rewire their policies and programmes at scale to protect the planet and people alongside their need for profits. Jobs that drive this sustainable way of life will therefore be at the centre of the 21st century and will grow in millions. Technology and tech companies will advise, create and enable these new jobs in the intersection of climate change and public services as well as consumer products.**

**C. Vijayakumar – World Economic Forum**

**“Future energy typologies must place an emphasis on education and place-making,” says Nielsen from C.F. Møller. “We must demonstrate how sustainable energy strategies can interweave with living and placemaking. We are moving towards a new era, one where landscapes are the hosts for energy infrastructure, rather than the raw material in the form of coal or gas. (...)”**

**Niall Patrick Walsh – Archinect**

**More than half of the world's GDP is at moderate or high risk owing to nature loss, notes Zabey, who sees this factor as a “strong economic case for businesses to step up”. But she adds that it's not only a matter of releasing green investment. The whole financial system needs to recognise the value of nature, which needs to be embedded in every choice a company makes.**

**Mark Hillsdon – RACONTEUR**

**Every year we transform more than 100 billion tons of raw material into products. Less than a quarter becomes buildings, cars, or other long-lasting things. Less than 10 percent cycles back into the economy. The circular economy movement aims to increase that number and reduce the enormous amount of waste.**

**Robert Kunzig – National Geographic**

**BMW's Vision of sustainable mobility that goes along with the 1,5 C goal to become 100% renewable and keep. BMW iVision Circular as a proof point for the future vehicle, developed by following the four key principles: RE:Think, RE:Use, RE:Duce and RE:Cycle. Sustainable Products have to be wrapped in emotional design, that has the power to impress and convince. Geo Fenced Bikes i.g. crash fixed categories**

**BMW / Oliver Zipse – BMW**

# **The 75 per cent problem: decarbonising steel production**

**In the first of four articles looking at ways to reduce emissions associated with the production of construction materials, we focus on steel.**

**Stephen Cousins – RICS**

**Less than zero: how to achieve energy-positive buildings - Reduce, reuse, recycle are the tenets of green technology but, in construction, abiding by these principles is rarely easy. Dutch developer EDGE proves that it can be done and wants to show us all how.**

**Sophie Knight – RICS**

**Globally, CRE companies have matured and adopted measures to deliver sustainable cities by embracing innovation with future-proof solutions, right from using recycled materials, renewable or sustainable energy, building natural capital, supporting human health and wellness and creating value for investors. Moving toward a circular built environment involves a shift in roles and business models for all active stakeholders, as a collaborative approach is the only way to navigate dependencies on government institutions, financial and investor institutions, supply chain, construction and more, all while improving performance along the way.**

**Arshdeep Sethi – Forbes**

**A proposed Shenzhen skyscraper would include a 51-story hydroponic farm, as hopes grow that vertical farms can help address food insecurity. As indoor farms that don't rely on soil become a growing strategy to tackle food insecurity, one academic has a vision to take vertical farming to new heights in China's megacities: the farmscraper. Carlo Ratti, an architect who runs MIT's Senseable City Lab, is proposing a 51-story skyscraper for China's technology hub of Shenzhen with a large-scale vertical hydroponic farm inside that can produce crops like salad greens, berries and tomatoes to feed up to 40,000 people per year.**

**Bloomberg, Can Indoor Farms Reach Skyscraper Height**

**The potential to use image recognition algorithms coupled with modern robotics to increase the quality of recycling is enormous.**

**Malene Mohl – Copenhagen Circle**

**Investing in the circular economy is increasingly viewed as a way to further the 'E' in ESG. While much attention among ESG investors is paid to transitioning to renewable energy to reduce greenhouse gasses, that shift would address just 55% of harmful emissions, according to the Ellen MacArthur Foundation. The remaining 45% are generated by the making of food and products – which can potentially be eliminated with the adoption of a circular economy, according to the foundation. The case for investing in a circular economy is as much about investor values as it is about investment performance.**

**Karen Hube – Barron's**

**For most of us, the idea of knocking down buildings to replace them with something shiny and new isn't problematic; in fact, for most architects, that is precisely what's keeping them in a job. As long as the building in question is sufficiently battered, broken, and/or unanimously considered unattractive, tearing it down to make way for a modern alternative is part and parcel of the job description. Honestly, adaptive reuse rarely comes into question unless the building in disarray happens to be of historical or cultural significance and even then, it's not a given. However, our fondness for demolishing buildings that are no longer fit for purpose or – god forbid – are out of fashion, is incredibly unsustainable and wasteful.**

**Samatha Frew – Architizer**

**There is no doubt that the city will be the defining feature of human geography for the 21st century. Globally, there are 1.3 million people moving to cities each week – and by 2040, a staggering 65% of the world’s population will live in cities. At the same time, the 600 biggest urban areas already account for 60% of global GDP, and this will only rise higher as cities become larger and more prosperous. In fact, experts estimate that up to 80% of future economic growth in developing regions will occur in cities alone.**

**Jeff Desjardins (2019) – World Economic Forum**

**In collaboration with zhenke petyr jin, lithuanian architecture office, AFTER PARTY, presents a concept for the future of office working. called 'social plant', the idea makes reference to le corbusier's 'maison dom-ino', which was a standardized housing prototype with an open floor plan. social plant is envisioned for a chinese context and as a flexible structure, allowing infinite adaptations and contributing towards a circular economy. the design is composed of a concrete space frame and a glulam timber structural system inserted inside. advocating for an 'environmentally cautious' building, AFTER PARTY proposes to use lightweight renewable wood and reduce the use of concrete by 60%.**

**zhenke petyr jin – designboom**

**Unlike the 15-minute city concept, Sweden's one-minute city model is not about meeting the needs of all city residents at a hyperlocal level – that would overlook fundamentals like public transit, job access, or specialist health care. Instead, the spaces just beyond the doorstep are ideal places for cities to start developing new, more direct ways of engaging with the public, Hill suggests.**

**Feargus O'Sullivan – Bloomberg**

**San Francisco's modern recycling approach starts with community wide commitments. Nearly two decades ago, in 2003, the city became one of the first to pass a public Zero Waste resolution, meaning the city would enact laws and adopt policies that lead to an existence where no discarded materials end up in a landfill. Instead, San Francisco aspired to sustain itself on recyclable or compostable materials that could be worked back into the production cycle – and the city wanted to achieve this ideal by 2020.**

**Nathan Mattise – Rolling Stone**

**The tendency for developments at this scale is the developer is always wanting to internalize the project, to turn it inwards,” says landscape architect James Corner, founder of James Corner Field Operations. “I always find those places bereft of urban life. They’re often empty and sterile simply because they’re not connected to anything.”**

**Nate Berg – Fastcompany**

**white arkitektur constructs its sara cultural centre entirely of locally sourced timber. the wood is sourced from regional sustainable forests, processed in a sawmill approximately 50km from the building. the timber structure of sara cultural centre sequesters more than twice the carbon emissions caused by operational energy and embodied carbon from the production of materials, transportation, and construction on site. the conscious design, together with a ground-breaking energy system developed by skellefteå kraft and abb, reduces the energy use of the building. solar panels on the roof produce renewable energy that, combined with the timber structure, compensate for the CO2-emissions produced by the building.**

**Kat Barandy – designboom**

**The development, funded in part by an affordable housing bond passed in the county, will provide 165 apartments for low-income seniors and veterans, 160 market-rate units with 10% reserved for people with moderate incomes, and 36 townhomes, all next to the 1.5-acre farm that can grow up to 20,000 pounds of produce each year. Farmscape, an urban farming company based in Oakland, will manage the farm and bring the organically grown, hyper-local produce to a location on the site each week for residents to buy at a deep discount. Some residents in the affordable housing complex will also have access to community garden plots.**

**Adele Peters – Fastcompany**

**Orca is the first-of-its-kind plant that translates the vision of industrial-scale direct air capture and storage into reality. This improved technology generation comes in an award-winning new design, which embodies the interconnection between nature and technology. For the technology generation which Orca represents, Climeworks has been able to intensify the process leading to increased CO capture capacity per module. This optimized process means that more carbon dioxide can be captured and stored than ever before.**

climeworks

**“Rooftop use could make a huge contribution to the densification of the city – and it could also prevent us from building more on the outskirts of our cities,” Winy Maas, cofounder of MVRDV, said in an interview included in the book. In Rotterdam, the team calculated that if 10% of the city’s roofs were used for housing, it could create 15,000 comfortably sized small homes. Like backyard houses, small rooftop homes can help add new residential space to neighborhoods that are already built up. Roofs could also be used to extend space from existing apartments or for adding new cowork-ing spaces to apartment buildings.**

**Adele Peters – Fastcompany**

**“The architectural futurism in which the way buildings have been depicted over the last five years has really focused on skyscrapers that have trees hanging off of them, and that appear to be very green,” says Jay Arehart, an architectural engineer at University of Colorado Boulder and a co-author of the report, published last week in the journal npj Urban Sustainability. “But in reality they’re not.”**

**Linda Poon – Bloomberg City Lab**

**Ransom explains that this type of farming is ideal for the urban environment, where space is a premium. By about 2050, 80% of our fresh produce will be consumed within cities, but producing food near to consumers is increasingly challenging, especially in the most densely populated areas where air quality is often poor. (...)**  
**“Europe is now one of the biggest hydroponic markets and the UK is catching up in that regard as well.”**

**Ellen Daniel – Verdict Magazine**

**The idea of the 15-minute city, where all your needs are within a 15-minute radius on foot or by bike, has earned Paris global attention and is central to its vision for its post-pandemic recovery. In Sweden, Vinnova and ArkDes, Sweden's national centre for architecture and design, are going a step further by focusing on single streets. The idea is to encourage each of us to help design, take care of, and make the most of what lies right on our doorsteps – what Hill calls “the one-minute city”.**

**Robin Yapp – The Local**

**In fact, the building overall seems to be designed for only stair-walking types. (...) To find the best examples of accessible architecture, we need to seek out disabled people themselves – as architects, project planners, and occupants of buildings. (...) These disability-specific spaces, reflecting the design work and knowledge of disabled people themselves, show that access can be a creative pursuit far beyond the legal minimum.**

**Bess Williamson – Metropolis**

**“More than three-quarters of C-suite executives recently surveyed by McKinsey report that they expected the typical “core” employee to be back in the office three or more days a week. While they realize that the great work-from-home experiment was surprisingly effective, they also believe that it hurt organizational culture and belonging. They are hungry for employees to be back in the office and for a new normal that’s somewhat more flexible but not dramatically different from the one we left behind.**

**Aaron De Smet, Bonnie Dowling, Mihir Mysore, and Angelika Reich –  
McKinsey**

**We believe the future of work will be liberated by the discoveries surfaced during this pandemic. As we have discovered the nomadic potential of the virtual desktop, we believe the boundaries of the office can be recast to include the urban horizon. We imagine a place where work and play together can redefine the location of the office of the future. We imagine a place of work where light and air, inside and outside, collaborate to create new places for both focused and collaborative work.**

**Gabrielle Golenda – Surface Magazin**

**The rapidly rising Gen Z population, which has never known a world without technology, will quickly have an outsized influence on our culture, business and politics. Workplace design will transform from compartmentalized to a collaborative, open and flexible environment without hierarchical distinctions. And corporations will adjust their outlook, management style and workplace amenities to better motivate and retain top talent. The Age of Responsive Real Estate will foster more creativity, productivity, happiness and wellbeing for new generations of user.**

**Richard Barkham – CBRE**

**Distributed work, digital tools, and the effects of AI are not new forces, but rapid acceleration has amplified their benefits and imperfections. With fewer geographic constraints and a more diverse contract workforce, companies can more easily improve intellectual, socioeconomic, and demographic diversity. Yet an AI-driven future may also find companies quantifying metrics around individual productivity or value, contributing to a hyper-monitored, ratings-driven workforce.**

**Rob Girling – Forbes**

**Establishing company spaces as natural extensions of the city generates adjacencies and proximities between customers and company members in the context of creative processes. Providing a physical locality – attractive and open to anybody interested in the company – invites new customers and builds trust to engage with similar interested minds. This nearness to clients provides the foundation to build a common narrative and pursue common objectives.**

**Raphael Gielgen – Accenture & Vitra**

**The physical workplace is unlikely to disappear altogether – at least not yet. There are advantages in bringing people together in a single place, even if less frequently than before. But it won't be the workplace as we know it today. As employers increasingly recognize that output is what matters, not how many hours people spend at their desks, there will be more flexibility in where people work.**

**David Morel – Forbes**

**In addition, mixing business offices with amenities such as event spaces, restaurants, and gyms within commercial buildings would allow these sectors to complement rather than compete with one another.**

**P. Bacevice, J. Mack, P. Tehrani and M. Triebner – Harvard Business Review**

**As offices reopen, a striking example of the post-Covid workplace is taking shape in Asia: the new headquarters for Hana Bank. The sculptural forms of the NBBJ-designed headquarters weaves nature and public pathways into the workplace, featuring a 12-story public ribbon park that winds from bottom to top, while private alcoves and outdoor terraces allow employees to work anytime, anywhere, says Designboom.**

designboom

**As the world's largest unplanned work-from-home experiment continues, many business leaders are asking as yet unanswered questions: When the dust settles, will remote work become the rule or the exception? Is a permanently remote workforce sustainable? How will productivity and employee well-being be affected? Will innovation suffer in the absence of face-to-face peer connections? What will be the role of the physical office?**

**Scott Buchholz, Mike Bechtel, Christina Brodzik, Kristi Lamar – Deloitte**

**In a world that's rapidly changing, what's high performing one day might be low performing the next. If we aren't accelerating performance improvement, we'll likely find ourselves falling further and further behind.**

**John Hagel – Deloitte Center for the Edge**

**The design lab follows on Prince Charles' Terra Carta, launched in January 2021. Deriving its name from the Magna Carta, which inspired a belief in the fundamental rights and liberties of people, Terra Carta 'aims to reunite people and planet, by giving fundamental rights and value to Nature. The lab's launch announcement comes at a pivotal moment for global cooperation to fight the climate emergency. 'We only have 100 days until COP26, the big UN conference in Glasgow to tackle the climate and biodiversity crisis,' continues the prince. 'We will all need to play our part, old and young, if we are to change how we look after the Earth, making it sustainable for Nature, People and Planet.**

**Sarah Douglas – Wallpaper**

**Enter the Chief Places Officer. With the battle for talent heightened in an AI-influenced, knowledge worker-focused future, the deployment of space will be a critical strategic weapon: a recruiting, efficiency and effectiveness tool that will pull corporate real estate functions closer to corporate strategy, HR and talent management – including an emphasis on how workspaces contribute to the general happiness and wellbeing of those who occupy them.**

**Richard Barkham – CBRE**

**It's these skills that will prepare consumers for the next wave of devices – delvices that will allow us to more easily merge the digital world with our real world environments. So let's take a look at some of the tools we'll use to navigate our future world.**

**David Tal – Quantumrun**

**“In the future, working together will be one of the main ways people use the metaverse,” Zuckerberg wrote in a Facebook post. Facebook is testing out Horizon Workrooms, a free app used on its Oculus Quest 2 virtual-reality headset. This feature will allow people to enter virtual offices as avatars and participate in meetings in real time. The product will connect people in our new hybrid and remote-work world.**

**Jack Kelly – Forbes**

**However, Justin Parry, COO of virtual reality training provider Immerse, believes this could be a step too far for businesses, certainly for some time. He says: “The enterprise offering of the metaverse is incredibly broad and could involve people spending half of their day jumping into a VR headset. From my perspective, we’re quite far away from that model at the moment.”**

**Sam Forsdick – RACONTEUR**

**Twinmotion is a real-time rendering tool; essentially it's almost like having a video game running constantly in the background. You can walk around and see your project and experience it in real-time, instead of having to wait hours for the rendering to finish. For us, what stands out with Twinmotion is that it's great at creating the animations as well. It's excellent at the storytelling part – where it's possible to animate trees, people and truly tell a story. It's about being able to walk your project, feel your project, and also pursue different options as you go along.**

**Architecture Today**

**Accenture's heavy investment in headsets follows the news that financial services organisation Bank of America is rolling out VR training across nearly 4,300 locations in the US, giving approximately 50,000 employees access to immersive learning and development opportunities.**

**WorldTech**

**Metaverse needs massive content to entertain the users. We need experiences like virtual amusement parks, virtual movie theatres, virtual concerts, virtual casinos, virtual schools, virtual conferences, anything you can name it. For architects, the metaverse is a virgin territory full of possibilities, and a Utopia without the constraints of the physical world. Architects can create unique designs backed with NFT for people who like to collect one-of-a-kind assets. Architects can also build digital assets like cities, buildings, furniture, sculptures, point clouds, textures etc, and sell them multiples times to virtual worlds, games, and movies.**

**Chloe Sun – Archidaily**

**Microsoft has said its plans for a meta-universe were inspired by the problems people have faced while working from home during the pandemic. Grant agrees its plans could make working from home a bit more social. “One of the downsides of the virtual conference facilities available at the moment is that it’s a very flat, very formal environment,” she said. “I’m excited to see what this will bring – it could be quite fun. Will this allow us to bump into people and have those water cooler moments we’ve been trying to get back for the last 18 months?” Avatars could even help neurodiverse workers find interacting easier, Grant said.**

**Rachel Banning-Lover – FINANCIAL TIMES**

**IT CAN TAKE years to learn how to write computer code well. SourceAI, a Paris startup, thinks programming shouldn't be such a big deal. The company is fine-tuning a tool that uses artificial intelligence to write code based on a short text description of what the code should do. Tell the company's tool to "multiply two numbers given by a user," for example, and it will whip up a dozen or so lines in Python to do just that.**

**Will Knight – WIRED.COM**

**Humans can disassemble and recombine learnt knowledge to conceive of new images – think of a red boat, visualise a blue car and then imagine a blue boat, for instance. A team of AI experts from the University of Southern California (USC) is researching how to emulate the process artificially. This involves a concept called disentanglement. Humans break down the things they learn and visualise them as colours, shapes and types. We are then able to recombine these attributes to form novel images.**

**Nick Easen – Raconteur**

**QuEra's technology will be most useful to researchers trying to model complex real-world problems with lots of possible outcomes. Quantum computers not only promise much more compute power than classical supercomputers but they are able to look at problems in a very different way. Classical computers rely on the binary logic of ones and zeros, which is good for some kinds of problems that require mathematical certainty. Qubits can represent far more than just two states. This makes them better suited for modeling and predicting the myriad of possible interrelations between multiple variables.**

**FAST COMPANY**

**Put people first: Technology is always about doing more with less, yet that combination is effective only if you pair technology with the right human skills. Just as technological disruption has generally led to automation and the elimination of outdated jobs, it has also always created new jobs. This is why innovation is commonly described as creative destruction. But the creative aspect of innovation is entirely dependent on people. If we can leverage human adaptability to reskill and up-skill our workforce, then we can simultaneously augment humans and technology.**

**B. Frankiewicz and T. Chamorro-Premuzic – Harvard Business Review**

**Fifteen years ago, people would have looked at you sideways if you told them you were a data scientist, driverless car engineer, or drone operator. It's hard to believe, but in 2006 those industries didn't really exist. By 2030, automation is expected to hit a midpoint, "something like 16 percent of occupations would have been automated and there would be impact and dislocation as a result of these technologies." Artificial Intelligence, spatial computing (augmented and virtual reality), brain-computer interfaces, are all set to substitute labor or complement it in some way. That being said, it's not the end of human jobs. Here are seven futuristic job ads that we might see one day on LinkedIn.**

**Cathy Hackl – Forbes**

**As robots become more sophisticated and artificial intelligence encroaches ever further into spaces traditionally the preserve of humankind, people are asking themselves: Where will humans fit in? And what skills should humans focus on in order to compete successfully in the job market of the future?**

**Janet Anderson – Roland Berger**

**The COVID-19 pandemic has shown that digital technologies determine not only whether or not countries thrive, but also how well they are able to navigate trying times. Applied effectively, digital technologies not only enable education and work to move from schools and offices to the home, but they also provide increasingly efficient ways to organize processes in companies and governments. New technologies such as 3D printing, augmented and virtual reality, sensors, artificial intelligence, quantum computing and robotics also have the potential to disrupt nearly any industry. The competitiveness of nations in these technologies will determine how prosperous their countries will be in the decades ahead.**

**Philip Meissner – World Economic Forum**

**The new Aarhus School of Architecture brings together ten former locations into one building. The dream was a robust structure, a living laboratory of architecture. This has inspired the workshop-like design, that presents itself like an anti-icon – an empty canvas made for ideas, creativity and learning, says Martin Krogh, partner at Adept about the architectural concept.**

**Alexander Russ – STYLEPARK**

**Technology that helps people do their work better isn't new. But the latest wave of innovations is significant. And our research shows that trends like remote work, e-commerce, and continuing automation could mean more than 100 million workers might need to find a different occupation by 2030 – that's roughly the same as the populations of Canada and Italy combined.**

**McKinsey**

**The world is changing fast. So, if you want to keep the demand in the labor market, you have to constantly develop and learn new things. In the near future many people will not be able to work due to artificial intelligence and automation systems. On the other hand, there are many new jobs on the market today for the same reason.**

**Brian W – kbviz**

**So what should we tell our children? That to stay ahead, you need to focus on your ability to continuously adapt, engage with others in that process, and most importantly retain your core sense of identity and values. For students, it's not just about acquiring knowledge, but about how to learn. For the rest of us, we should remember that intellectual complacency is not our friend and that learning – not just new things but new ways of thinking – is a life-long endeavour Adaptability – the key to the future One clear lesson arises from our analysis: adaptability – in organisations, individuals and society – is essential for navigating the changes ahead.**

**Carol Stubbings – PWC**

**Learning in the flow of work is a new idea: it recognizes that for learning to really happen, it must fit around and align itself to working days and working lives. Rather than think of corporate learning as a destination, it's now becoming something that comes to us.**

**Josh Bersin – Harvard Business Review**

**Use the shift to hybrid as an opportunity to identify cultural gaps, and to set new norms to create a better, stronger culture. Encourage managers to take notice of who often dominates the conversation in meetings or receives the most recognition for a project's success. Make the evaluation criteria for projects as clear as possible: The more explicit the rubric, the less room for bias.**

**Laszlo Bock – Harvard Business Review**

**Europe's business leaders need to move boldly and at speed to meet this moment. Currently, they stand at risk of missing the value play – and with it, the potential to shape the outlines of the post-pandemic world. Success requires diverging from well-trodden strategic and operational paths. It requires commitment to advanced technologies and to innovations applied with purpose to enable sustainability solutions – traditional European strengths. It also requires confidence in the power of ecosystems to effect positive competitive and social/environmental change.**

**Jean-Marc Ollagnier – Accenture**

**Tomorrow's jobs will look different from today's – and not just because you might be working alongside robots. In this edition of McKinsey for Kids, peer into the future of work and what it may hold for you, whether you're thinking about becoming a doctor, an influencer – or a garbage designer. Other: Game designer, Digital-Currency advisor, Drone-traffic controller**

**McKinsey for Kids: I, Robot? What technology shifts mean for tomorrow's jobs**

**What could shorter working hours mean for our carbon footprint? Less time at work means more possibility for a society-wide move to low-carbon activities rather than using our hours outside of work to consume more. Can working from home reduce CO2 emissions too? For those who travel more than 6km every day, staying in their home office instead would cut their carbon emissions, according to the International Energy Agency (IEA).**

**Rosie Frost – Euronews.green**

**We visited the World's Greenest Buildings to see if design can help save the world. Architects have incorporated nature, renewable technologies and climate change solutions into their buildings. On the trip, we see the carbon-neutral and eco-friendly design which is helping fight global-warming for our future.**

**Going Green**

**With the built environment responsible for around 40% of the global carbon emissions, it is crucial that sustainable practices are adopted to achieve net-zero ambitions. RICS is one of 49 globally prominent organisations that have developed ICMS 3 (International Cost Management Standard) – a world first for cost and carbon management in construction, from concept to completion and beyond. These new standards provide a professional toolkit to measure and consistently report on carbon and influence the most basic design and construction decisions. If cement were a country it would be the third largest emitter of carbon in the world and so action to de-carbonise construction is required now.**

**Alan Muse – RICS**

**Last year Business Chief highlighted a survey of 500 company executives in the US, where 45 per cent said they ‘anticipate demand for enhanced employee engagement software in the wake of the pandemic’. Apps like Bonfyre, Hummingbird and Workvine offer different combinations of functions: gathering data through staff surveys, delivering perks and benefits, acting as internal communications, replacing traditional HR functions like recruitment and onboarding, as well as offering wellbeing tips and tools. Microsoft’s bid to be market leader is Viva. Unveiled in February this year, it’s an attempt to put all these functions in one piece of software to avoid managers wasting time toggling between various apps and platforms.**

**Riya Patel – Frame**

**More than three-quarters of C-suite executives recently surveyed by Mc-Kinsey report that they expected the typical “core” employee to be back in the office three or more days a week (Exhibit 1). While they realize that the great work-from-home experiment was surprisingly effective, they also believe that it hurt organizational culture and belonging. They are hungry for employees to be back in the office and for a new normal that’s somewhat more flexible but not dramatically different from the one we left behind.**

**Aaron De Smet, Bonnie Dowling, Mihir Mysore, and  
Angelika Reich – McKinsey**

**Supercommuters are defined by a more than 90-minute trip to work, either because they can't afford to live nearby or because they've been seduced by a lifestyle they can have farther afield. While the U.S. workforce grew by 13% from 2010 to 2019, the ranks of supercommuters increased by 45%, according to Chris Salviati, senior housing economist at Apartment List, an online rental service. Although his study used data collected before the pandemic work-from-home revolution, Salviati says new hybrid commute schedules will probably encourage people to expand the search radius between work and home. "There might actually be a lot of folks ending up in situations where now—because they're not commuting every day—they're willing to endure a longer commute," he says.**

**Sarah Holder – Bloomberg**

**Though often harder to quantify than simple asset turnover, improving the efficiency of our urban form is often the lowest cost strategy for reducing emissions throughout energy sectors. If fast-growing cities fail to adopt the right patterns of development now, emissions will be locked in for decades. Conversely, drawing on urbanist principles, such as better land-use, urban design, transport planning, and housing policies and practices, will make the vision of net zero carbon cities that much easier to realize – requiring fewer EVs, heat pumps, building retrofits, batteries, and solar panels to achieve the same result.**

**Francesco Starace – World Economic Forum**

**Skills gaps continue to be high as in-demand skills across jobs change in the next five years. The top skills and skill groups which employers see as rising in prominence in the lead up to 2025 include groups such as critical thinking and analysis as well as problem-solving, and skills in self-management such as active learning, resilience, stress tolerance and flexibility.**

**Saadia Zahidi – World Economic Forum**

**Research from the Work Institute shows that the average cost of employee turnover is 33% of the position's salary - to put that into perspective, for a job paying \$60,000 a year this would amount to roughly \$20,000. In contrast, according to new data from the Lighthouse Advisory, 95% of learning professionals say that it takes less than \$10,000 to reskill someone for another job.**

**Kerri Moore – Learning Hub**

**Called Street Moves, the initiative allows local communities to become co-architects of their own streets' layouts. The ultimate goal is hugely ambitious: a rethink and makeover of every street in the country over this decade, so that "every street in Sweden is healthy, sustainable and vibrant by 2030," according to Street Moves' own materials. Unlike the 15-minute city concept, Sweden's one-minute city model is not about meeting the needs of all city residents at a hyper-local level — that would overlook fundamentals like public transit, job access, or specialist health care. Instead, the spaces just beyond the doorstep are ideal places for cities to start de-veloping new, more direct ways of engaging with the public, Hill suggests.**

**Feargus O'Sullivan – Bloomberg**

**The pace of technology adoption is expected to remain unabated and may accelerate in some areas. The adoption of cloud computing, big data and e-commerce remain high priorities for business leaders, following a trend established in previous years. However, there has also been a significant rise in interest for encryption, nonhumanoid robots and artificial intelligence.**

**Saadia Zahidi – World Economic Forum**

**Establishing company spaces as natural extensions of the city generates adjacencies and proximities between customers and company members in the context of creative processes. Providing a physical locality – attractive and open to anybody interested in the company – invites new customers and builds trust to engage with similar interested minds. This nearness to clients provides the foundation to build a common narrative and pursue common objectives.**

**Raphael Gielgen – Accenture & Vitra**

**The physical workplace is unlikely to disappear altogether – at least not yet. There are advantages in bringing people together in a single place, even if less frequently than before. But it won't be the workplace as we know it today. As employers increasingly recognize that output is what matters, not how many hours people spend at their desks, there will be more flexibility in where people work. How much flexibility will depend on the nature of the work but, with the right technology and an Internet connection, it could potentially be anywhere they choose. Desert island, anyone?**

**David Morel – Forbes**

**(...) mixing business offices with amenities such as event spaces, restaurants, and gyms within commercial buildings would allow these sectors to complement rather than compete with one another. For example, bars could be placed at rooftop level to take advantage of a building's views while fitness spaces could be located on a mezzanine or at mid-level to take advantage of larger floor areas. (...) This, in turn, increases the attractiveness of certain neighborhoods to businesses offering complementary services.**

**Peter Bacevice , John Mack , Pantea Tehrani and Mat Triebner –  
Harvard Business Review**

**Improve the quality of urban projects in the planning, development and design phase to enhance sustainability and inclusiveness; Promote an enabling environment that ensures the implementability and viability of the projects in the medium and long term; Steer a participatory process between City Authorities and Delivery Partners to develop strategies to optimize the project's alignment to the SDGs and the Programme objectives.**

**Global Future Cities**

**The new city is rebuilt in its surrounding rivers. Former streets become snaking arteries of liveable spaces, embedded with renewable energy resources, green vehicles, and productive nutrient zones. This replaces the current obsession with private car ownership towards more ecological forms of public transport.**

**Nick Dunn, Paul Cureton – THE CONVERSATION**

**Enter the Chief Places Officer. With the battle for talent heightened in an AI-influenced, knowledge worker focused future, the deployment of space will be a critical strategic weapon: a recruiting, efficiency and effectiveness tool that will pull corporate real estate functions closer to corporate strategy, HR and talent management – including an emphasis on how workspaces contribute to the general happiness and wellbeing of those who occupy them.**

**Richard Barkham – CBRE**

**Identity is no longer confined to physical appearances or real-world relationships. Immersive digital worlds and experiences have given people the freedom to construct identities entirely separate from their IRL ones. These realm-fluid identities provide the space to explore a sense of self far beyond the limits, norms and expectations of physical lives.**

**Liron Reznik, Samar Ahsan, Kala Berg, Makena Naegele, Isabel Sanoja, and Guillermo Solorzano – frog Futurespace**

**Companies are looking to bring in 50 percent of their revenues from new products, services, or businesses by the year 2026. New-business building is a crucial way to get there.**

**Lilli Beard, Markus Berger de Leon, Shaun Collins, Bhavna Devani, Ralf Dreischmeier, Will Fairbairn, Nate Janewit, Thomas Lambeck, Ari Libarikian, Derek Schatz, Upasana Unni, and Belkis Vasquez-McCall – MCKInsey & Company**

**According to ABI Research, revenues for industrial digital twin and simulation and industrial extended reality will hit \$22.73 billion by 2025 as organizations use Industry 4.0 tools such as artificial intelligence (AI), machine learning, edge computing, and extended reality to accelerate digital transformation.**

**MIT Technology Review**

**By some estimates, response to the pandemic has fast-forwarded digital adoption by five years. One result of this “digitalization at scale and velocity” is massive skill shifts. The shift in skill needs was already a challenge, but more than 58% of workforces report skill transformations since the onset of the pandemic.**

**Udemy 2023 Workplace Learning Trends Report**

**From central command to decentralized everything The structure of tomorrow's world is being built with decentralization at its core.**

frog

**Individuals are moving beyond identification with broad communities in favor of smaller squads, with whom they share many interests and lifestyle factors. From stationary biker gangs to guerrilla gardener groups and gamer kin, micro-communities will form the basis for macro-societies as individuals work to unite their squads in new, exciting ways.**

frog

**People think successful entrepreneurs seek out risk. That's not right. Successful entrepreneurs smartly manage risk by sharing it as widely as they can. Now more than ever, companies should embrace open innovation and find smart ways to collaborate. In the onslaught of never-ending change, it's easy for leaders to freeze and focus on survival. Don't freeze. Seize the silver lining and find unique opportunity to turn today's ambiguity into tomorrow's opportunity.**

**Scott D. Anthony – HBR**

**Business leaders expect half of their companies' revenues five years from now to come from products, services, or businesses that do not yet exist, according to the latest McKinsey Global Survey on new-business building. Given the ambition to develop these new revenue streams, many of which respond to sustainability goals and technological change, it is no surprise that a majority of respondents say business building is one of the top strategic priorities at their organizations – double the share of recent years.**

**Lilli Beard, Markus Berger de Leon, Shaun Collins, Bhavna Devani, Ralf Dreischmeier, Will Fairbairn, Nate Janewit, Thomas Lambeck, Ari Libarikian, Derek Schatz, Upasana Unni, and Belkis Vasquez-McCall – MCKInsey & Company**

**After a year marked by layoffs, many companies are short staffed but unwilling to hire new fulltime employees. Rotating employees into new positions can meet those needs.**

**Rachyl Jones – The Observer**

**Fastest-growing green and greening jobs globally. Bubble size indicates share of countries in the sample where the job was among the fastest-growing in 2016 – 2021. Smallest: 5%; Largest: 50%. Bubble shade indicates type of job. Dark: Green job; Light: Greening job.**

Linked In Economic Graph

**The evolving urban ecosystem. To increase efficiency and reduce costs, companies need to rethink their real estate strategies. Hybrid work models allow companies to optimize their footprint by eliminating redundant spaces and reconfiguring others to provide the services and amenities employees require. Under-utilized spaces may be redesigned to support new local partnerships, provide new employee services or become incubator spaces for startups and community organizations. This repositions the organization as an integral part of its community and can create new revenue models.**

frog

**The idea of a workation is to get work done by taking time away from work. Workations have emerged as a popular engagement strategy for organizations in the US and Europe. Collaboration tools and advancement in workplace productivity technologies have made it easier for employees to stay on top of work from remote locations while enjoying some time off from the hustle of everyday life.**

**Sushman Biswas – Spiceworks**

**The types of interaction people have when they are hybrid working means employees need to master the basics. In our last survey of adult workers, we found that 10% of adults in England reported no prior experience of digital skills.**

**El Iza Mohamedou, OECD Centre for Skills – Raconteur**

**It's been a decade since holographic Tupac graced the stage of Coachella. And despite the hype it generated, the technology still hasn't found many successful applications beyond these kinds of concert gimmicks – like the giant twerking hologram at the Video Music Awards earlier this week. Small startups and tech giants alike have long been working on three-dimensional video chat and holograms – or projections that look like them – a concept that holds real promise for our new remote work era. But so far, promises that seamless 3-D video conferencing is right around the corner have been premature.**

**Brody Ford & Ian King – Bloomberg**

**Project Starline is a technology project from Google that combines advances in hardware and software to enable friends, families and co-workers to feel together, even when they're cities (or countries) apart.**

**Google**

**With applications already present in the hospitality and retail sectors, mixed-reality experiences complement physical spaces with digital aspects and expand the reach of digital products.**

**Frame**

**In the pre-pandemic world life brimmed with chance meetings and interactions – at parties, or in check-out lines and elevators. When those interactions were suddenly sucked into the digital realm, they were no longer limited by the physical constraints of time or place. They broke the boundaries of personal space, always as close as the nearest device. The ubiquity of digital interactions and relationships has produced a consumer desire for limitations that formerly existed solely in the physical realm. In other words, artificial constraints that enable slower, more authentic connections.**

frog

**The work environment – whether physical or virtual – is the manifestation of an organization’s purpose and ethos. It represents the enterprise’s beliefs about its people, community and partners, as well as its vision for the future. Your workplace atmosphere, processes and tools also signify your goals and values to your employees, clients and visitors. As workspaces become increasingly varied and flexible, it is essential to create a consistent brand experience across the organization.**

**frog**

**Socialization is paramount for employee wellbeing and the development of company culture. Social interactions between colleagues inspire and disseminate ideas, making “water-cooler conversations” more important than ever in the remote work era. To rebuild relationships and culture while fueling creativity and innovation, companies should create virtual and physical spaces that encourage and support social interactions.**

frog

**The more the workplace is connected in a thoughtful way to the organizational strategies, leadership models, operational frameworks, and potential outcomes of a company, the stronger the workplace will emerge.**

**Diane Hoskins– MCKInsey & Company**

**Saudi Arabia's new city promises a zero-emission, near-perfect vertical smart world. But it comes at a price: Billions of dollars, and displacing entire communities and animals. Forcing many people to consider if it's actually worth making at all.**

**Diane Hoskins – MCKInsey & Company**

**We cannot remodel the whole city. The cities are too big. So what do we do? We can go to very specific points on the map that we know are active zones that need something. Health, mobility, parks, education, and culture – these are social impact infrastructures. They are acupunctural. But the fabric, which is housing, is preferential. So, the new fabric binds together with the new acupuncture of cultural impact, then we have the new city.**

**Space10**

**In a post-oil future, life in the Arabian Peninsula may be characterized by temperatures beyond human habitability. Absence of groundwater sources will generate a climate that the inhabitants of the region have not experienced before. Yet NEOM's marketing and promotional material seeks to demonstrate that the inhabitants of these enclaves will not have to confront the consequences of the fossil fuel economy, enjoying nothing but its potential. Despite mounting environmental pressures, NEOM's advertising offers the promise of stability against the disruptive consequences of climate change in a highly securitized test-bed.**

**Gökçe Günel – E-flux Architecture**

**Quiet quitting is not a life philosophy or policy proposal that needs logical scrutiny. It's also not a political weapon to be wielded to prove how much more woke or conservative you are than everyone else. It's both more incoherent and essential than all of that. Figuring out how work fits into a life well lived is hard, but it's an evolution that has to happen. Quiet quitting is the messy starting gun of a new generation embarking on this challenge.**

**Cal Newport – The New Yorker**

**However, remote work has discreetly driven the quiet quitting trend in numerous ways. For one thing, it has increased the amount of hours employees work, adding to higher levels of burnout. Moreover, according to research, burnout is a major concern in the workplace, particularly among younger Gen Z professionals in their twenties.**

**Multiplier**

**With 47 percent of people allowed to work remotely full-time post-pandemic, we're finally realising that some people are equally (if not, more) productive outside the office.**

**Michael Metcalf – Timestatic**

**Airbnb has today announced it will partner with 20 destinations around the world to make it easier to live and work anywhere, including Bali, the Canary Islands and the Caribbean.**

**Airbnb**

**The pandemic spurring a shift to remote working has led to greater flexibility for millions globally, which many are taking as an opportunity to literally work from anywhere. A rise in ‘workcations’ – trips that give people the opportunity to change up their workday scenery – led Luna, Villagrán and Moncayo to the brief for the 25-sq-m Arrachay cabin, situated in the Andean ‘paramo’ of Ecuador. Transportation feasibility and material optimization were two of the biggest aspects of the project: the wooden building, comprising two modules, was constructed 100 km away from its final site. High tension and compression forces, as well as extreme weather conditions, were among the challenges that the design had to address.**

Frame

**According to experts, our most realistic strategy for confronting climate change is resilience rather than reversal. As we pursue the critical goal of reducing emissions and greenhouse gas levels, it is inevitable that we will have to live with significant changes to the global climate. Businesses and brands can help build climate resilience by providing consumer solutions – food, clothing, skincare and even health insurance – that prepare individuals to live with and live within those changes.**

**frog**

**The sustainability imperative. Sustainability plays a significant role in new-business building: more than nine in ten respondents say they'll build new businesses at least in part to meet demand for sustainable products and services. Additionally, 42 percent expect to put sustainability at the center of their new businesses' value proposition. But the survey also suggests it's early days for companies looking to address their sustainability goals: nearly 80 percent of respondents say their new businesses don't track sustainability targets relating to carbon footprint or other environmental impacts.**

**Lilli Beard, Markus Berger de Leon, Shaun Collins, Bhavna Devani, Ralf Dreischmeier, Will Fairbairn, Nate Janewit, Thomas Lambeck, Ari Libarikian, Derek Schatz, Upasana Unni, and Belkis Vasquez-McCall  
– MCKInsey & Company**

**Sustainable leadership seeks to maintain an appropriate balance between economy, society and ecology while achieving high performance, resilience and sustainability (Burawat, 2019), and goes beyond the concept of green and social responsibility in enterprises. Although responsible leadership has expanded its focus from the relationship between leaders and followers to stakeholders, it still takes the current situation of organizations as the starting point (Tideman et al., 2013). In addition, responsible leadership implements democratic consultation with stakeholders, while sustainable leadership transcends its own interests by playing a beneficial role in society, which in turn enables it to achieve performance growth, resilience and sustainability, thus ensuring the balance of economy, society and ecology.**

Yaohua Liao– Frontiers

WORK PANORAMA 2023

**Architecture firm BIG has constructed a mass-timber Passivhaus factory in a Norwegian forest for outdoor furniture maker Vestre, which features a green roof and solar panels as well as an exterior slide. Instead of being hidden away on an industrial estate, The Plus factory development is nestled in 300 acres of woodland near the village of Magnor on the Swedish border. The cross-shaped building consists of four double-height wings, each housing a different stage of Vestre's production process and radiating out from a central office area with an internal courtyard at its heart.**

**Jennifer Hahn – Dezeen**

**Steel production is responsible for 7% of global carbon dioxide emissions every year, but hydrogen-based green steel, collective action from businesses and new procurement legislation from governments could help the industry and supply chains to reach net zero.**

**Alec Fenn – Raconteur**

**Climate tech is one of the hottest categories for European and US startups and scaleups, with more than \$111bn (£97bn) raised globally last year. Hundreds of companies are developing innovative ways to slash emissions and remove carbon from the atmosphere, accelerating rich nations towards net zero. But in the world's poorest continent, green tech fulfils different needs. Africa is responsible for just 3.8% of annual global carbon emissions and most of its population has a minuscule environmental impact. The main challenge, then, is how to adapt to an already-changing climate while developing its economy sustainably. It's one a new crop of tech founders is facing head-on.**

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**Located in Sangdo Station on Seoul's subway system, the farm is the first one out of five in the city's metro stations, the result of cooperation between the city government and Farm8, a private company that develops smart farm technology and sells the produce. Amid rising interest in smart farming, Farm8 brought in \$47.8 million (54 billion South Korean won) in 2020, up from \$7.4 million in 2010. Yeo Chan-dong's farm is located in Seoul's Sangdo subway station. "We want to change the perception of farming," said Lee Hwang-myung, senior manager of the smart farm project at Seoul Metro. "We want to encourage people to see agriculture as something not of the past but as part of the future."**

**Steven Borowiec – Rest of World**

**Most e-waste recycling is an exercise in relatively crude crushing and crunching. It renders smartphones – an estimated 12 per cent of all e-waste – and other technology so much fiddly fragments. This makes sorting, separating, retrieving, and recycling precious metals and materials tricky to impossible. Daisy and team have been designed to take apart iPhones with (almost) as much care and attention as they were put together. As part of its broader material recovery strategy, Apple identified 14 priority materials – from metals including gold and tungsten to paper – that make up 90 per cent of the ingredients used in its devices and packaging, many of which were being recovered in low quantities, in low quality or not at all by existing recycling methods.**

**Nick Compton – Wallpaper**

**Uber drivers in India say that problems with the facial recognition they use to access their apps is costing them work. In a survey conducted by MIT Technology Review of 150 Uber drivers in the country, almost half say they have been either temporarily or permanently locked out of their accounts as a result of problems with their selfie. Many suspected that a change in their appearance, such as facial hair, a shaved head, or a haircut, was to blame. Another quarter of them believe it was due to low lighting.**

**Varsha Bansal – MIT Technology Review**

**By combining its AI-based autonomous drone-control solution and advanced machine-learning capabilities with machine vision tools, Nokia Bell Labs has created a technology that can track the growth of millions of plants. “We have developed a completely autonomous drone solution with multiple drones flying through this farm,” says Klein. That allows the farm to monitor details such as the height and color of its plants, spot poor growth areas, and predict the production yield.**

**MIT Technology Review**

**Under the hood, text-to-image models have two key components: one neural network trained to pair an image with text that describes that image, and another trained to generate images from scratch. The basic idea is to get the second neural network to generate an image that the first neural network accepts as a match for the prompt. The big breakthrough behind the new models is in the way images get generated.**

**MIT Technology Review – Will Douglas Heaven**

**In an economy where data is changing how companies create value – and compete – experts predict that using artificial intelligence (AI) at a larger scale will add as much as \$15.7 trillion to the global economy by 2030.**

**David De Cremer & Garry Kasparov – Harvard Business Review**

**While AI has the potential to eliminate bias in hiring, it can also multiply inequalities exponentially if it is used carelessly. This is because of the way that AI works: algorithms correlate information from a finite data set in order to make predictions about job applicants. An algorithm's predictions are only as sound as the data set on which it relies. If an algorithm's training data consists of the employer's current workforce, it may simply replicate the status quo. This can be problematic if the current workforce is made up predominantly of employees of one race, gender, or age group, because a hiring algorithm may automatically screen out applicants who do not share those same characteristics.**

**Keith E. Sonderling – World Economic Forum**

**Boston Dynamics' handy helper and humanoid robot Atlas can maneuver obstacles, seamlessly join a choreographed dance party, or jog on its own in the park, and today, he can effortlessly work on construction sites. In the recently released video by the group, Atlas manipulates the world around it as the humanoid robot interacts with objects and modifies the course it is on.**

**Matthew Burgos – Designboom**

**Adaptive artificial intelligence (AI), unlike traditional AI systems, can revise its own code to adjust for real-world changes that weren't known or foreseen when the code was first written. Organizations that build adaptability and resilience into design in this way can react more quickly and effectively to disruptions.**

**Jackie Wiles & Lori Perri – Gartner**