



# Creativity 创意 2030

# C2030 #7

## Industry, Innovation and Infrastructure 工业、创新和基础设施

## Sustainable Cities and Communities 可持续城市和社区

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# Preface

By Sarah Orlando

Creativity 2030 Journal (C2030) is a journal launched by the International Centre for Creativity and Sustainable Development (ICCSA) under the auspices of UNESCO, an editorial venture promoting the achievements of the 2030 Sustainable Development Goals (SDGs) through creativity.

C2030 is about practical ways to deal with social challenges, focusing on key issues and solutions that have the potential to empower local communities and drive international debate.

For more than a year now, our world has been experiencing the Covid-19 pandemic, and many aspects of our life have been shattered. Our attention – be it in private or public spheres, or on the national or international level – has been healthcare, and issues related to our interconnectedness as humans and as societies.

As such, the discussions in this issue can be seen as part of the post-pandemic debate. Most of the arguments are in fact connected to how – given the lesson Covid-19 has forced upon us – can we change the present, so as to build a better, sustainable future.

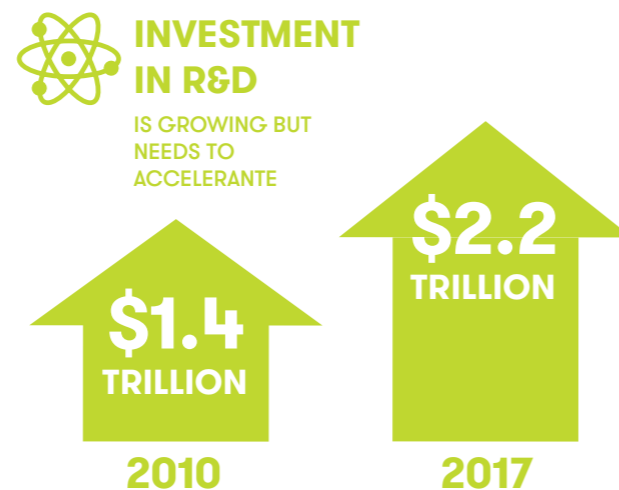
Now more than ever before, the UN 2030 SDG Agenda is at the top of each debate, and now more than ever our actions are under scrutiny, within such a framework.

This issue of C2030 is thematically anchored by Social Development Goals #9 and #11. But they are also interlinked to others.

In particular, Goal #9 states “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”, and Goal #11 “Make cities and human settlements inclusive, safe, resilient and sustainable.”

The latest update on SDG progress by the United

Nations, The Sustainable Development Goals Report 2020 (SDG Report), says regarding SDG #9 that promoting inclusive and sustainable industries and continuing to invest in physical infrastructure, innovation and research are vital to long-term economic development. Investment in research and development (R&D) globally, and financing for economic infrastructure in developing countries has increased. Nonetheless, small-scale industrial enterprises – major sources of employment in developing and emerging economies with a crucial role to play in the post-pandemic recovery of the global economy – do not have the capacity to deal with unexpected shocks, such as the current crisis, without help from governments. The importance of increased investment in R&D has been highlighted by Covid-19: more investment is needed in the pharmaceutical industry and in emerging technologies such as artificial intelligence.



## MORE INVESTMENT IS NEEDED IN THE PHARMACEUTICAL INDUSTRY AND IN EMERGING TECHNOLOGIES SUCH AS ARTIFICIAL INTELLIGENCE

Another important aspect, connected this time to Goal #11, is that over 90 per cent of Covid-19 cases are occurring in urban areas. Cities will emerge from the pandemic, but whether they are prepared for the next crisis will depend on how much they can advance data-driven inclusive and sustainable urban development.

The SDG Report underlines how global progress has been reversed in reducing the share of slum dwellers, whose vulnerability has been intensified by the pandemic. Concerted efforts by national governments, city authorities and other stakeholders had led to a significant decline in the proportion of the urban population living in slums – from 28 per cent in 2000 to 23 per cent in 2014. Alarmingly, that trend has reversed as rapid urbanization outpaces the development of housing, infrastructure and services. The proportion of the urban population living in slums rose to 24 per cent in 2018, or over 1 billion people, due to increases in Northern Africa and Western Asia and sub-Saharan Africa. And such numbers are even more worrying considering that many urban dwellers in the developing world work in the informal sector and are at high risk of losing their livelihoods as cities lock down for the pandemic.

Nonetheless, beyond the devastation of some figures, the pandemic has also prompted positive rethinking of our cities. It has made it clear that urban planning is crucial for better public health and for mitigating people’s vulnerabilities to other hazards, such as natural disasters.

Because of this, technology and investment in technological infrastructure and applications are the real deal changer for the future, even more so after the pandemic, with its connected risks, but

especially taking into consideration the potential that they offer in terms of solutions.

This is why in our Journal you will find most of the articles linked to the technological debate. From data analytics for better planning, data for inventing a sustainable material, data for cultural value creation, to

AR for cultural heritage sharing and AI for education, all are technological applications that will impact on the big changes and challenges of concern to young generations when dealing with





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CITIES WILL EMERGE FROM THE PANDEMIC, BUT WHETHER THEY ARE PREPARED FOR THE NEXT CRISIS WILL DEPEND ON HOW MUCH THEY CAN ADVANCE DATA-DRIVEN INCLUSIVE AND SUSTAINABLE URBAN DEVELOPMENT

Overall, it is indeed what connects us, our interdependency, and our ability to innovate, that make it possible to aim for a more circular, sustainable, shared future, even after a pandemic. ■



BEFORE COVID-19

SHARE OF URBAN POPULATION LIVING IN SLUMS ROSE TO 24% IN 2018

the future of work. That is why we have also decided to feature a special Q&A with some of the most brilliant Chinese entrepreneurs and managers of today, who “talk straight to the kids” about their career moves.

But some aspects must not be forgotten: the legal framework in which innovation takes place is often behind innovation itself, and thus often unfit to protect and foster real, breakthrough change. And on the other hand, innovation is not practicable unless there is strong investment in R&D and education, making learning an essential part of any innovative process.

Another important aspect we have considered is sustainability in the approach to building, especially when building or designing in preparation for or as a reaction to climate emergency or disaster relief programs, and innovative applications where product and service design come up against real healthcare issues, especially when dealing with developing countries.

Last but not least, not to be forgotten, is the importance of communities, and the interesting projects revitalizing the countryside, especially in China. Mario Cucinella Architects in an original interview for C2030 Journal calls it “human regeneration”, and Michael C. Mitchell refers to it as the “human factor”, which is the key element pushing us to consider the pursuit of happiness and other values beyond efficiency in planning cities.

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# The Big Picture

## 大背景

## Rethinking Urban Health

By Tolullah Oni

CAMBRIDGE – In 1945, in the rural South African village of Polela, a community-based approach to improving health was implemented. In what became known as the Polela model, the prevailing health-care strategy was adapted to account for social, economic, and environmental data from community members. For example, monitoring of household crop failures and malnutrition in preschoolers allowed health authorities to anticipate vulnerabilities to health and well-being and intervene early to prevent ill-health.

For many years, the Polela model’s central ideas spread and were adopted by other communities around the world. But health care has since shifted back toward a narrower approach focused on biomedical interventions. We have recognized the importance of the environmental factors in health ever since the nineteenth century, when improvements in waste management and housing conditions helped to rein in cholera and tuberculosis in England, increasing life expectancy in the process. Yet with the rush of urbanization in recent decades, we have been neglecting these lessons, as well as our custodianship of the planet, with adverse consequences for public health.

Today’s cities have developed in ways that are ecologically disruptive and ultimately unsustainable. They are increasingly overcrowded, forcing the poor to live in low-quality housing with little access to health information, communication, and care. They are also chronically vulnerable to stresses on water, land, and food systems. And repeated shocks from natural disasters, climate change, and sociopolitical unrest – not to mention the legacies of colonialism and apartheid – will likely cause inequalities in health access and outcomes to widen further.

You may already know that in 2020, 1.8 million people (predominantly in cities) died from Covid-19. But did you know that another 1.8 million people are estimated to have died from tuberculosis in the same year? The world’s deadliest infectious disease

is closely bound up with environmental factors. The United Kingdom’s “window tax,” enacted in 1696 and repealed in 1851, prompted many households to brick up their windows, contributing to an ongoing TB epidemic. Yet despite this earlier lesson, many cities and countries still have policies tantamount to “window taxes,” with low-income communities having poorer access to healthy green public spaces, clean air, and homes with adequate ventilation, water, and sanitation.

Another urban scourge is obesity, which kills 2.8 million people per year, and contributes to many common types of cancer. Urban food systems have gradually shifted toward supplying more energy-dense calories high in sugar, salt, and fats for populations that are already more sedentary. The result has been a steady increase in obesity rates, particularly in low- and middle-income countries and among low-income communities within high-income countries.



**Tolullah Oni**, a public health physician and urban epidemiologist, is a clinical senior research associate at the University of Cambridge and Founder of UrbanBetter.

### A Better Way

Reviving the Polela model requires that we make the invisible visible and think comprehensively about prevention, in addition to cures. Across the Global South, where urbanization is occurring most rapidly, a majority of people are being left behind, with over 50% of urban residents in Africa living in informal settlements. Similarly, in the Global North, the experiences of a growing minority have been ignored as the sources of poor health proliferate.

Health is and always has been political. In Polela, the initial progress was lost under the racist, patriarchal apartheid regime installed in 1948. But while ideologies and special interests are often deeply entrenched, experiences from the Covid-19 response hint at the possibility for radical change.

Urban design holds one of the keys to better health – both for people and the planet. The best protection against health emergencies is a strategy to bring urban inequalities out from the shadows so that they can be addressed head on. Urban development must be seen not just as a process of construction and infrastructure expansion, but as an act of community building and health creation.

Cities should measure success by the availability of social infrastructure like public spaces, which are good for mental and physical health. They should focus on ensuring clean air, which will reduce the burden of childhood asthma and other diseases. By expanding access to healthy foods and placing restrictions on unhealthy foods, policymakers can reduce the economic costs of poor health while also improving well-being. And by ensuring the provision of ample high-quality housing, they can sharply reduce the transmission of infectious diseases.

In a city that puts public health first, assaults on these sources of well-being would be treated the same as oil spills and other environmental damage caused by negligence. Those who are responsible would be held accountable and made to pay for remediation.

With 68% of the world's population projected to live in cities by 2050, the United Nations' "Decade of Action" (2020-30) should prompt everyone to re-evaluate the purpose of cities. Particularly in the

emerging metropolises of Africa and Asia, now is the time to create new health systems that integrate urban planning, transport, and housing.

### Revisiting Old Thinking for a New Model

The challenges cities face call for a paradigm shift. We need to move from a narrative focused on individual behavior to one that accounts for the broader environment. Action against climate change and future health threats must be seen as two sides of the same coin. Health governance must be integrated more with other domains of public policy, because health is not and never will be a standalone issue.

Moreover, the idea of health security will need to be updated from a perspective focused solely on guarding

against outside threats to one that recognizes the need for global solidarity in the face of shared problems. And policymakers will need to show some willingness to relinquish power to individual communities, furnishing them with the data and agency needed to hold urban systems and sectors accountable for health outcomes.

It is time to revisit the ideas behind the Polela model, so that we can develop a Polela 2.0 for the current age of urbanization and climate change. A twenty-first-century Polela system would use urban design to build climate resilience and safeguard the socioeconomic and environmental determinants of health. It would collect and collate intersectoral data to monitor for early signs of health and environmental vulnerabilities. It would facilitate interventions based on community expertise and experience. And these interventions would be administered by people who know the local context in which they are operating.

A Polela 2.0 system would also address the imbalances and inequities in how health is financed, by bringing local and foreign-donor representatives together to co-design solutions. No longer would the system treat the majority of urban inhabitants as invisible. In re-imagining urban health, we must learn from the past and be mindful of local communities' experiences in the present. Failing that, we cannot possibly ensure a more sustainable, equitable, or healthier future. ■

**THE BEST PROTECTION AGAINST HEALTH EMERGENCIES IS A STRATEGY TO BRING URBAN INEQUALITIES OUT FROM THE SHADOWS SO THAT THEY CAN BE ADDRESSED HEAD ON**

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# Creativity Empowers Sustainable Development Amid Covid-19

By Charles Landry

The Covid-19 pandemic has done two things at the same time. It has created absolute clarity and it has created immense confusion.

It has created clarity about what really matters. Obviously the Sustainable Development Goals (SDGs) are in that category. It has given us a glimpse of a future in which people in various places see their worlds diminishing as climate issues and nature raise their insistent voices.

It is also a first global experience for all eight billion people together and simultaneously, which has humbled us in our collective hubris.

We've been speeding along too quickly and have acted at times completely inappropriately. However, the global lockdown has given us a silver lining: we've had to slow down, which has created the chance for us to reflect on and to see what really matters.

### The Creative Economy in Covid-19 Times

The creative economy has been dramatically hit by the pandemic, and evidence from Germany shows revenue has fallen by 50%, something other countries probably share.

But what is really important, as mentioned before, is that a lot of the creative economy is extremely interested in activity. There needs to be a purpose, and we need to link creativity and the creative economy to that purpose. This is the main thing we need to hold on to in these times.

One of the issues that is so powerful in the creative economy is its storytelling capacity: the sowing of story narratives and the reaping of possibilities. This is one of the areas where things are already happening, and it could be encouraged even more.

Creativity is a resource which tries to find solutions to difficult and intractable problems and that's why



**Charles Landry**  
Advisory Committee of International Center for Creativity and Sustainable Development under the auspices of UNESCO, Founder of the Creative City Concept and Think Tank Comedia

we need to muster all our supplementary attitudes. Because curiosity, openness, creativity and awe are aspects that will help us solve some of the intractably difficult problems that we all know are surrounding us.

### Changes Amid Covid-19

The pandemic did something quite amazing. Something that seemed impossible was immediately possible. What it showed us was that the intrinsic elements of creativity — individuals and sectors — are there, the solutions are there, but a crisis was needed as the catalyst to make a change.

### Transforming the Bureaucracy

One of the things that has begun is a shift in the way our organizational systems work. They are mostly based on 19th Century thinking and on hierarchical systems. These are inappropriate in a world in which we need the collective intelligent of all sectors of public administration, business worlds, civic worlds, community worlds, all together. And that's all about creating a context of less siloed and more integrated and holistic thinking.

### Shortening the “Social Distance”

Another thing the pandemic has shown us is that we are social beings, and we shouldn't be saying Socially Distancing but rather Physically Distancing.

Indeed the power of proximity has become absolutely apparent or wonderful. Collective online conferences, opera performances, music performances of all sorts, have showed us that creative economy activities have created an atmosphere of play, and opportunities to be more open and innovative.

This atmosphere has created vibrancy. When we say vibrancy, people might suppose we mean lots of people in a crowded room all together where nobody is really speaking to anyone, because there is too much going on. Vibrancy might not mean a hundred people in a room, but more ten people in a room, feeling much closer to each other, and therefore having a better quality of experience.

So when we rethink some of these things, we'll see that there is a benefit in looking at things afresh.

### Rethinking What People Really Want

There have always been pandemics in fact. But how has this one brought out something essential in human desire? People want to generate distinctiveness from the places in which they live, and that's still true. They want a place at ease with itself and with a heritage full of memories. They want a place in which they can connect and communicate with neighbors far and wide.



But one thing they also want which is now more and more important than never before is nurture and nourishment. They want their places to be ones in which people create and design, co-design and co-create, co-shape and co-make. They want to feel that they are nurturing us.

That's about facilities but it's also about other things. Nurturing is about a generosity of design, a generosity of spirit, expressed in the way the environment works. And lastly, people obviously want expression, their imagination channeled.

### Paying Attention to Mental Health

The pandemic has shown us that mental health is at the heart of society. Particularly in urban areas, the biggest problem as we know from WHO is that cities can create many mental health problems and these have been exacerbated by the pandemic and the isolation arising in its wake. This proves the importance of social contact.

In addition, there is an inevitable dilemma between the young and the old - it's the old who are more threatened, and the young who might feel the old are giving them problems. The young desire to connect, despite the risk of facing any safety issue.

### **Digital technologies empower sustainable development**

Every pandemic historically has changed the way cities work. Just like the Spanish Flu, this pandemic is doing so too. And what is also happening because we are in a different position and in a different world, is its changing the nature of place, space and time.

It is easy to say these words, “changing place, space and time». But just think of how the digital turn has accelerated what is already happening. In a funny way, we have fast forwarded 5-7 years because of this pandemic. We are doing things that we want to be doing them the same way, but instead we are homeworking, with all the repercussions.

### Promoting the Rise of Locality

The special geography that made cities grow and intercept in its urbanity the surrounding environment up to a 150 kilometers



Chongqing Industrial Museum aims to innovate its way towards the protection of its industrial cultural heritage

Due to the Covid-19 pandemic, this year's UN Day concert was prerecorded and screened in the General Assembly Hall (Photo: UN official website)



radius is also going to change. This is creating and shifting to another key point of the pandemic, which is this issue of the rise of locality. Locality could be neighborhoods in cities, but how the concept spreads in smaller urban places has become ever more important.

Those who developed the buzz and attractiveness of big city hubs will be trying to reinvent that vibe in smaller places, because they can communicate digitally and wander casually about town.

### Changing the Way we Work and Move

Digital and other technologies will help us advance self-cleaning materials, something which has already started happening, and all of that will change the way we work.

Now that also means we need to think about our planning clearly. And that planning in a sense may change the relationship between interior space, semi-interior space and external space. ■

This article is based on the speech given by Mr Charles Landry at the second meeting of the first Advisory Committee of International Center for Creativity and Sustainable Development under the auspices of UNESCO.

# Cultural Tourism: A New Trend in Economic Development

By Mehri Madarshahi

Covid-19 shook the fundamentals of human civilisations and put in doubt the practicality of global cooperation, interaction and exchanges. Over 171 million persons were infected and nearly 3.6 millions persons have died as a result of this pandemic globally (www.worldometers.info). The pandemic economic impact has also been devastating. Based on an International Labour Organization (ILO) report published in May 2021, over the past year at least 225 million jobs have disappeared worldwide — losses that were four times larger than what was exacted by the global financial crisis more than a decade ago. The responses to curb the pandemic were national lockdowns, closures of borders and venues, physical distancing measure and a wide variety of travel restrictions that made tourism one of the hardest-hit sectors.

Until 2019, tourism was considered a major sector of the international economy providing about 300 million jobs, 29 per cent of the world's services exports, and it accounted for seven per cent of global trade or US\$1.7 trillion worth of goods and services. However, the global contraction in tourism had devastating economic consequences, in particular for some developing countries that were highly dependent on the income from tourism (UNCTAD).

Although loss of jobs between 2019 and 2020 resulted in major GDP deficit in all countries, the impact was much more notable among developing and less developed countries. Until late 2019, tourism exports in several small island developing states (SIDS) accounted for more than half of their gross national product (GNP).

It is then not far from reality to conclude that the ensuing job crisis resulted not only in deepening further inequality but also a rise in poverty with a long lasting impact into the future.

According to the World Tourism Organization (UNWTO), loss of tourism income from countries such as China contributed largely to an income deficit in countries depending on tourism. In 2018 alone, Chinese tourists spent some USD 277 billion



**Mehri Madarshahi**  
Vice-Chairman of Asia Pacific Forum for Economic and Sustainable Development, Former Senior Economist of the United Nations, Visiting Professor of South China University of Technology

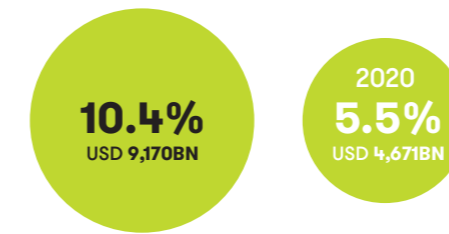
globally that is equivalent to an estimated 21% of global travel spending. In the absence of international travel, some countries resorted to promoting local and national travel among which China proved to provide a successful model. With the global travel market still hindered by the pandemic and Chinese tourists forced to stay home, one such program was sponsored by the Ministry of Culture and Tourism in China and is referred to as “red sites” locations. These sites associate tourism with history and cultural heritage of significance for the Chinese Communist Party's (CCP) history. Domestic travelers have given the “red tourism” industry a boost. “In 2020, the number of red tourists exceeded 100 million and contributed to 11% of domestic travel.” The timing couldn't be better for travel industry players hoping to capitalize on this growing segment, with the country gearing up to celebrate the 100th anniversary of the founding of the CCP in July. By both state actors and the private sector, “red tourism” initiatives are being rolled out almost weekly to coincide with this national milestone. It is predicted that this campaign will attract 50 million travelers in 2021. According to data from travel platform Tongcheng-Elong, travelers aged 21 to 30 comprise some 40 per cent.

The major side benefit of ‘red tourism’ in China is also its close linkages to programs of rural regeneration, agricultural diversification and improving local livelihoods.

## Tourism, Culture and the Creative Economy

Apart from its role in the global economy, tourism is also being associated with culture and the creative economy.

## \$ Total GDP contribution



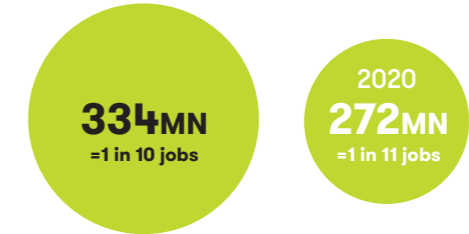
## Total Travel & Tourism GDP change in 2020:



## Global economy GDP change:



## Total Travel & Tourism jobs



## 1 in 4 net new jobsC

were created by Travel & Tourism during 2014-2019



## change in jobs in 2020



Source: WTTC March 2021

The importance of cultural tourism has recently been re-affirmed by the UNWTO as a major element of international tourism. The expansion of cultural tourism in the direction of intangible heritage and contemporary culture has created more attention for the increasing integration between tourism and the creative economy. As OECD emphasized in its 2014 annual report, creative economy approaches to tourism offer the potential to add value through developing engaging creative content and experiences, supporting innovation and helping to make places more distinctive and attractive. The unforeseen negative impact of the coronavirus on cultural life and artistic expressions was, however, sudden and unpredictable. It forced many nations to retreat from all their planned activities at short notice and the ensuing lockdown caused cancellation or postponement of global events such as the Tokyo Olympics, other sports programs, festivals, arts fairs and exhibitions.

Although, at present, it is difficult to assess the overall economic impact on the value chain and its sub-sectors. Nevertheless, some estimates provide an essential snapshot of the seriousness of damages suffered by the industry. According to Eurostat, in the Balkans, Central, Eastern and Southern Europe, where the important contribution of tourism and culture to the economy was registered as a major factor for economic development.

The higher vulnerability of culture to the impact of the pandemic has been well documented: in France alone, the health crisis affected 2000 cinemas, 3000 bookshops, 1200 museums, 1000 theatres,

hundreds of art galleries and live events including festivals or trade fairs.

## Creative Economy and Tourism

The creative economy is also a growing component of the cultural tourism along with cultural heritage, crafts and museums. Creative experiences such as artistic creation, dance, cookery, are now also being used to frame destination culture. One such example is the growing influence of flamenco tourism industry in Seville, Spain, which is increasingly integrating creative productions embodied in flamenco schools and courses, performances for tourists, and memorabilia for visitors.

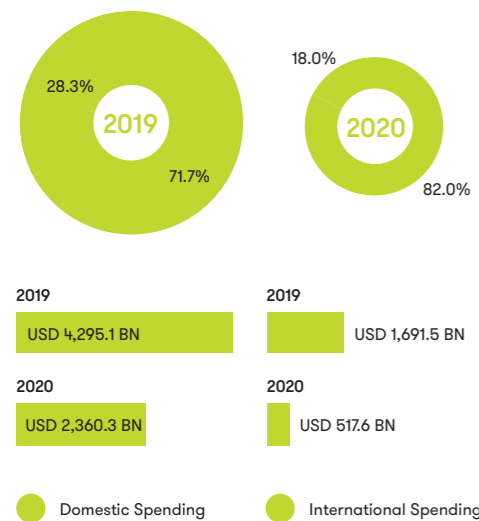
Cultural tourism can also be stimulated through the development of cultural routes linked to food and wine brands, including olive oil routes, cheese routes and wine routes in Spain, France and Germany among other countries. Film festivals and other creative events are also becoming important ‘knowledge hubs. According to some estimates, cultural tourism may account for 40% of global tourism.

The culture related to tourism has become less tangible, more accessible and has been developed in a more bottom-up fashion than in the past. This has created challenges and opportunities for countries around the globe in developing and utilizing the many synergies between tourism and culture.

The advocacy to support cultural tourism, particularly in terms of product development, networking, collaboration and capacity building is growing worldwide. Specific actions should include



## \$ Domestic vs International Spending



Source: WTTC March 2021

more monitoring of the results of policy implementation and setting shared goals for cultural tourism stakeholders. Main future policy objectives were seen as developing integrated approaches to tourism and culture synergies and increasing community empowerment and inclusion.

### Sustainable Development Goals and Cultural Tourism

As discussed, tourism is one of the world's fastest growing industries and an important source of foreign exchange and employment for virtually all countries. Hence, it is no surprise that tourism has entered the global radar screen of the United Nations, with its commitment to promote international cooperation and mutual understanding. Growth comes with increased responsibility to protect our planet's cultural and natural assets, or the very foundation of our societies and civilizations.

Major stakeholders have increasingly reaffirmed to build and strengthen partnerships between the tourism and culture sectors. This is reflected in the UN 2030 Agenda for Sustainable Development with its 17 sustainable development goals (SDGs).

Sustainable tourism has been defined in the UN report "The Future We Want" as a significant contributor to the three pillars of sustainable development economic, social and environmental issues. Tourism is also identified in SDG target 14.7. As a tool to "increase the economic benefits to Small Island Developing States and least developed countries" – of great importance for the Asia and Pacific region.

The year 2017 was declared by the UN as International Year of Sustainable Tourism for Development. According to the deliberations presented on this occasion, sustainability must be the foundation of planning and managing tourism investment, real estate development in resort areas and culture-led urban revitalization. This designation brought a unique opportunity to this industry to promote and demonstrate the contribution of tourism in shaping a better future for people and the planet.

### Conclusion

In light of the devastations caused by the Covid-19 pandemic, travel and tourism - beyond the numbers and economic benefits - have become a major contributor to a transformation that slowly and gradually is bringing us together, as humans, like never before in a fast, globalized world. Nonetheless, the outlook for the tourism sector remains highly uncertain. The Covid-19 pandemic continues to hit hard, and international tourism is expected to decrease by around 80% in 2020-21. The crisis, nevertheless, is "an opportunity to rethink" tourism approaches and planning for the future. Tourism is at a crossroads and the measures put in place today will shape the tourism of tomorrow.

Governments need to consider the longer-term implications of the crisis, while capitalising on digitalisation, supporting the low carbon transition, and promoting the structural transformation needed to build a stronger, more sustainable and resilient tourism economy. Culture has an immeasurable inherent value to host communities, and as such constitutes one of the most important assets for tourism. Equally, tourism can be a considerable force for the promotion and conservation of tangible and intangible heritage.

As all sectors, the tourism sector must commit to protect, conserve, and promote ecosystems, water, natural habitats, and biodiversity, minimize their environmental impact, and induce a trend to sustainable consumption and production patterns, including adopting healthy lifestyles in harmony with nature.

Finally, we must conclude that culture and tourism are vital components for inter-cultural dialogue and peaceful co-existence at the local, regional and international levels. We must therefore raise awareness about the processes and impact of sustainable cultural tourism on security, peace-building and reconciliation by strengthening cross-border travels. ■

# Letter from Basel: What's Next?

By Jacques Herzog

Domus's guest editor 2020, David Chipperfield, received a letter from Jacques Herzog (Herzog & de Meuron), who wrote to him about the difficulty for architects to actively act on environmental disasters. English text and Chinese translation are republished by courtesy of Domus China.

Dear David,  
You ask me what we architects should do about the unmistakably impending environmental catastrophe. About social inequality. About poverty. About the degradation of this planet's resources. About the pandemic, which has placed us in an almost surreal mode that begs description. All of which is being managed by political leaders, whose cynicism and absurd actions put the Marx Brothers to shame.

Dear David, the answer is: nothing.

Or do you know of any moment in the history of architecture in which an architect contributed to the decisive issues of society? Architects have always kept company with the world's mighty. They built palaces, temples, stadiums, entire cities. For the most part in the spirit of the times, and rarely as an expression of renewal and change. Can architecture actually change anything? Or anticipate anything? For example, in the art world? In my own experience, Tate Modern's Turbine Hall was an innovation, inviting not only a different audience but also a new kind of art production and presentation that transcends the traditional format of an exhibition space. Artists devised an entire and utterly immersive universe. They were no longer just visionaries; they were able to create whole universes of their own invention. The architecture had given them the platform and the parameters to do so. That may have been audacious because no one knew if it would work or if artists would want to make use of the space. In a way, it was a response to what people were asking at the time – what's next? – at least with respect to the art world. The Turbine Hall was an answer and offered the potential of a spectacular, unprecedented museum experience. But it was also an ideal platform for the emergence of a dire development in art: its radical commercialisation. The art scene in London had never experienced anything so intensely international and contemporary. In the wake of Tate Modern, the art market saw an unprecedented boom. A boom that also affected real estate, transforming the London skyline, in just two decades, into a tsunami of random high-rise buildings with no concept whatsoever of urban planning. High-rises are now crowding round Tate Modern as if attempting to peer into the exhibition spaces and take part in their artistic life, although most of the owners don't even live there and watch from a distance – if at all.

In short, we architects cannot prevent the commercialisation of art and certainly not a real estate boom. That relates to other issues: namely, international monetary policy and investment strategies. Which architect would refrain from building a pretty little tower, thus actively supporting the real estate bubble, boosting his own prominence and generating square kilometres of vacant residential and office space? We architects need clients. The more famous the architectural office, the more it will attract potential clients and investors. Not only private investors, but governments as

**SOMETIMES, AS AN ARCHITECT, YOU STUMBLE ON SOMETHING BY PURE CHANCE; YOU RARELY HAVE THE OCCASION TO DECIDE WHICH FIELD YOU'RE GOING TO WORK IN.**

**DO YOU KNOW OF ANY MOMENT IN THE HISTORY OF ARCHITECTURE IN WHICH AN ARCHITECT CONTRIBUTED TO THE DECISIVE ISSUES OF SOCIETY? ARCHITECTS HAVE ALWAYS KEPT COMPANY WITH THE WORLD'S MIGHTY.**

well. Especially when it comes to important public buildings, like stadiums. Projects of that kind are often commissioned by governments that do not have the same democratic standards as we do in Europe. Take China. But we still accept projects there because they are so appealing and because we believe that through the way we design, we can make a contribution to a free society. In the case of our Bird's Nest, we were not simply interested in the Olympics but much more in the everyday life that would follow. The Piranesian lattice that surrounds the seating was conceived as a large public sculpture, designed to attract the people of Beijing – en masse. Like a park, a recreational

area where people can gather and do things together. Which actually ties in with social conventions in China. And that's exactly what has happened with the Bird's Nest. It's a popular location that attracts a great many visitors, even without a sports event. The perfect backdrop for a selfie. An icon of China's ascendancy in the 21st century. But has this new focal point had any effect on the political life of Beijing?

Does the architecture of the stadium also serve as a social sculpture with political impact? That may have been a naive assumption which, incidentally, we shared with Ai Weiwei, who was, of course, more likely to know better. But then: has architecture ever managed to change society?

No. We can't change society but we can make a tangible contribution. Where and how? Let's take a look at the major issues today: climate, landscape, migration, healthcare, digitalisation.

For example, landscape. We established the ETH Studio in Basel 20 years ago. It is exclusively dedicated to doing research into the themes of landscape and urbanisation. Initially, only in Switzerland, then later elsewhere: the Nile Valley, the Canary Islands, Hong Kong, Kenya, the Sahara. We who work there – both authors and students – have learnt a great deal. But has it been of any other use? We've issued several publications – with limited reach. They will enjoy oblivion in university archives. But there were two books that have had a noticeable and enduring influence on Swiss politics and the guidelines of official spatial planning: Switzerland. An Urban Portrait (2006) and Achtung, die Landschaft (2015). The latter is almost like a manifesto and its core proposal reads: "Build on the built." This approach is especially urgent in such a densely built country like Switzerland. We live here; it is hard to miss what is happening around us. Being on site, experiencing it, is an important prerequisite for architects when developing an idea for a project. Switzerland is a small country with a limited amount of land, for which reason our study cannot serve as a 1:1 model for Kenya, the United States or Russia, but it can clearly be applied to, say, Hong Kong or Tenerife.

But neither there nor elsewhere is there any idea, any plan and certainly no control over where, what and how one might build on the unoccupied landscape that still remains on this planet. Who owns the land? Who makes the decisions, who gives permission to clear and exploit it? For building permits in the middle of nowhere? The status of the landscape

should be equal to that of cities, equally independent and important. We are certainly not "alarmed" that cities are concentrated on only two per cent of the land, according to Countryside, a study by Rem Koolhaas. On the contrary: the landscape has to extend into the city and not conversely!

We can't change society. But at least single projects, like our study of the Swiss landscape, can succeed in being incorporated into real politics. Which means our work can actually be political but, paradoxically, only if we work and think as architects so that the "utopia" takes physical shape. Becomes tangible.

So we can do something after all! Architects want to do something; they want to take action. Very few of us are intellectuals although many see themselves as such. Even fewer can write, and if they do write and their writing turns into books, they will at best attract attention in architecture magazines and universities. The more versed they are in generating catchy phrases as PR for themselves, the more successful they will be in steering the way we think. PR for the author but what about the substance, the insight? We were so fascinated with Rossi's L'architettura della città, we thought Venturi's Complexity and Contradiction in Architecture was the greatest thing, architects after World War II trembled in veneration of LC's arrogant "trois rappels à Messieurs les architectes". And what has survived? Nothing! Not a single impetus for today! Only stuff to cram for exams in architectural theory. I take no satisfaction in saying that, only a certain wistfulness, also regarding my own texts, studies and essays. Or letters, like this one written to you, David, that may also reach other architects who ask themselves questions about our business. In other words, another bunch of words with limited reach. Texts survive only if they are independent, if they stand on their own. Only if they create their own self-contained worlds. Only literature can do that, or, still more impressively, poetry. It continues to speak to us long after it has been written. What architects write is not literature; at most, it's zeitgeist or, more likely, just journalism or anecdote.

Not everyone would agree and there are many who invest great architectural passion in their writing. I recently discussed this with Peter Eisenman. He is among those who put considerable faith in writing. But it is basically wishful thinking to assume that an architect's words – like those of a prophet – are stronger than mighty walls of stone. All we have left is the architecture itself. At least that, because it calls for physical action. What an observation to make this year of all years, the year of corona, when we had to stay at home for weeks on end. An indoor drama for a lot of people, like a Beckett piece on the small stage of a provincial theatre. And we realised: it does make a difference when the window is in the right place so that light and sunshine can shine into the cramped space of a flat. And maybe there's a terrace with an outdoor view. And a tree nearby. Those are not spectacular prospects for us pampered architects, and yet they are such neglected and undeniably crucial concerns.

So we can make a difference by working on projects that are responsive to the needs of users. Making intelligent use of space, actually a traditional task of the architect, is still of fundamental importance.

Not only space, but also the way we shape it and the materials we use. You can't produce architecture without actual building materials that have to come from

**WHO OWNS THE LAND? WHO MAKES THE DECISIONS, WHO GIVES PERMISSION TO CLEAR AND EXPLOIT IT? FOR BUILDING PERMITS IN THE MIDDLE OF NOWHERE?**

somewhere – and are renewable, or not, as the case may be. We can do without concrete, for instance, unless it is meant to play an explicit aesthetic role. Or where it is indispensable as in buildings that are extremely tall or reach deep into the earth. This would substantially reduce CO2 emissions worldwide and would protect precious, non-renewable resources, like gravel and sand, by leaving them where they are. In fact, we should radically rethink the use of concrete and not simply because we want to be environmentally correct. Concrete has become commonplace. It's omnipresent on today's construction sites because you can do practically everything with it. We architects abuse materials by thoughtlessly exploiting them or only taking an interest in their surface appeal. Which is to our disadvantage since we thereby restrict our own latitude as well. Architecture as an arrangement or production of ideas is not architecture; it's mere decoration and, as such, not only ugly but also detrimental to the entire world of architecture. Architecture has such immense potential precisely because its sensual, material and spatial diversity is so similar to us human beings, so fragile and vulnerable. We can hear it, it can amplify and dampen sounds. It can store smells in stairwells and living rooms. Architecture has a smell; every room, every flat smells different. Like the people who live there.

Sometimes, as an architect, you stumble on something by pure chance; you rarely have the occasion to decide which field you're going to work in. When we won the tender to build the REHAB clinic in Basel 20 years ago, we had no idea that our research into the rehabilitation of patients would have such an enduring impact and lead to so many projects in the field of healthcare. We came up with a new hospital typology, largely defined by flat volumes. Like landscapes with numerous courtyards. Each of them different in design, material, detailing, vegetation, lighting. A building with spaces so different and distinct creates an intensity and diversity of perception for patients who have been forced to surrender the mobility they once took for granted. There is practically no other building by H&deM that embodies such a holistic combination of landscape, city and interior. And which provides an experience equally accessible to all those who live and work in those spaces. Patients, doctors, healthcare workers, visitors. This REHAB clinic taught us so much about hospitalisation. Knowledge that we have been able to apply to projects in Denmark, Switzerland, and now in San Francisco as well. Obviously, architects always say that they learn from their projects. But in this case it isn't simply lip service. Healthcare is a totally neglected field. Architects were rarely allowed to get involved, and if they did, they were unable to turn the hospital into a worthwhile, liveable place. Can you think of any hospital built since 1945 that does so? A place that offers both carers and patients surroundings that can help make moments that are hard to take more bearable? In fact, more often than not, it's quite the opposite. Even some of the medically best-appointed clinics in the world are often boring boxes, ugly monsters made even uglier by proliferating extensions. And in the current pandemic, those ugly places, the neglect and the global inability of politics, medicine and society to cope have become painfully visible in the news reports on TV. Healthcare and its architecture is going to be a major concern in the years to come – and I think that many architects will discover it is a new field of activity.

So, dear David, that's enough. I've been rambling. If I keep going, my letter will turn into an essay, and you know only too well how we feel about that. There are naturally a lot of other concerns – but more about them maybe another time.

Warmly,  
Jacques  
Basel, August 2020

# Transforming Education After the Pandemic

By Julia Gillard



**Julia Gillard**, a former prime minister of Australia, is Chair of the Board of Directors of the Global Partnership for Education.

LONDON – As many countries cautiously reopen classrooms, schools remain crucial barometers of our progress toward ending the Covid-19 crisis. We need to keep children healthy while protecting their right to an education, but the pandemic has hit the most vulnerable children hardest and exposed the worsening inequality of learning opportunities. We must now heed these harsh lessons and transform education systems to make them more equitable, effective, and resilient.

School closures have been one of the many measures that governments have adopted to contain a virus that so far has claimed 3.4 million lives. At their peak, over 1.6 billion children were cut off from education – half of them in low- and lower middle-income countries.

Although we cannot yet fully grasp the long-term implications of this lost learning for the hundreds of millions who are still missing out on school, it clearly will have a life-changing impact on the most vulnerable children, especially girls. An estimated 20 million girls may never set foot in a classroom again because they have

been sent to work to help provide for their families. As many as 13 million could be forced into early marriage and thus forego their education altogether. For millions of others, school closures have increased their risk of teenage pregnancy or of becoming victims of domestic violence.

Given this grim reality, each school reopening is a victory that can potentially change children's lives permanently for the better. But rather than simply return to pre-crisis approaches to learning, we must transform education systems entirely. We cannot go back to a status quo of unequal opportunities and poor learning outcomes, in which a quarter-billion children were already out of school and over half of all ten-year-olds in lower-income countries lacked basic reading skills.

Together, we must deliver a global recovery built on a foundation of education systems that deliver quality learning to all children, no matter where they live, how prosperous or poor their families might



be, or who they are. And we need to begin by ensuring that children can return safely to schools that offer a clean environment with effective ventilation, sufficient toilets, and other basic amenities.

Countries can also use distance-learning tools to reach children outside the classroom, opening up new possibilities to educate those who were previously cut off from formal education. School closures due to Covid-19 have only hastened the need for alternative delivery methods so that every child can continue to learn.

Even before the pandemic, organizations like the Global Partnership for Education (GPE) were helping to enable learning beyond the traditional classroom. In Afghanistan, for example, advanced learning centers and more accessible and equitable community-based education have proven successful. These options give children in remote areas – especially girls, who had often been excluded from education altogether – a chance to learn.

In Pakistan's Balochistan and Sindh provinces, we have seen how technology, including smartphone applications like WhatsApp, can support teachers in serving children in less accessible areas. And Sierra Leone, drawing on its experience during the 2014-16 Ebola outbreak, has emphasized radio learning during the current crisis, with GPE support enabling children to benefit from education programs that were broadcast while schools were shut.

Initiatives like these can be woven into education systems to make them more inclusive, so that they deliver learning at the scale needed to address past inequities. That in turn can help to bridge the education gaps left not only by the Covid-19 pandemic, but also by conflicts, poverty, natural disasters, or the effects of climate change.

By channeling support through partner-country governments to national education systems, the GPE has so far helped to get 160 million more children into school, more than half of them girls. Moreover, GPE funds attract other donor contributions to multiply the organization's financial support, in line with national education priorities.

This approach is fundamental to catalyzing necessary change and delivering it at the scale



demanding by today's education emergency. To date, 97% of GPE-backed education-sector plans include strategies to reach the most marginalized children in lower-income countries, particularly girls and children with disabilities.

In the wake of the pandemic, governments also must find the funds to shock-proof their education systems for the future. That means not only developing and integrating distance-learning options, but also ensuring that schools have proper sanitary facilities and are teaching basic hygiene. Teachers need training in new methods, and we need to ensure that children who rely on their school for at least one meal a day don't go hungry during a crisis.

To achieve all of this, we must immediately help governments in lower-income countries to ensure that their education budgets are protected from any belt-tightening resulting from the pandemic's economic fallout. Domestic resources account for the vast majority of education funding, but international support can play a bigger role to help insulate and expand existing resources. That will allow governments to start reshaping learning even before their countries' economic rebounds are underway.

This year, the GPE is asking governments to pledge at least \$5 billion toward transforming education for children in 90 countries and territories where schools are not only essential for learning but also critical to children's welfare and security. Safe, inclusive, and quality education can be a springboard for recovery from the pandemic, and a buffer against the next crisis. ■

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# Digital Economy and the Creative Industries: Challenges and Opportunities in Advancing the SDGs

By Hans d'Orville



**Hans d'Orville**  
Chairman of Advisory Committee  
of International Center for Creativity  
and Sustainable Development  
under the auspices of UNESCO.  
Former Assistant Director-General  
for Strategic Planning of UNESCO

The emerging creative economy accounts for an increasing share of national economies, if not the global economy, and it is even more relevant as the United Nations General Assembly has designated 2021 as International Year of Creative Economy for Sustainable Development.

In the past twelve months, no actor within the creative value chain has been spared from the impact of the pandemic, whether it be in the creation, production, distribution or access. This has added gravely to the otherwise intrinsic vulnerabilities of various elements of the culture sector, that otherwise is considered to be thriving from, and replete with, creativity and innovation.

Covid-19 caused the closure if not disappearance of many cultural venues, in an effort to prevent the unchecked spread of the pandemic. Museums, theatres, concert halls have been the victims. All

cultural activities involving human live performers and the presence of an audience have been subject to severe restrictions.

In such an environment, digital infrastructure and digital technologies and tools have played an exceedingly important role to enable the presentation, dissemination, sharing and global enjoyment of cultural and creative works and events.

Real life, physical events have shifted to virtual events facilitated by digital technologies and the streaming of online presentations, generating new forms of cultural presentations, skills and consumption. Multimedia exhibitions, auctions, music performances, concerts, theatre plays, dance performances, book presentations, movies and films, cultural heritage presentations, cultural tourism promotion, conferences and a plethora of



other creative exchanges have migrated to the digital cloud world. They are apt to upgrade and diversify the whole range of traditional, contemporary and new types of cultural industries and novel modes of creation.

Digital technologies offer new opportunities for achieving the core objectives set by the UN for social development, namely eradicating poverty, promoting full and productive employment and fostering social inclusion and equity. Digital technologies can foster social inclusion by facilitating the full participation of all people in society and by ensuring their access to quality education, knowledge, health care, decent work, affordable housing, social protection and cultural assets and practices.

Billions of transactions and interactions among people, artists/creators, businesses, institutions, multiple devices and processes are generating zillions of data. They are conducted through digital and mobile tools – ranging from the internet to video to all new components of Industry 4.0 such as artificial intelligence, blockchain, robotics, the internet of things, big data, 3D printing and more, all of which eventually will transform the way we live, work and live together and help attain the SDGs.

Cities plan to increase investments significantly in digital twins, 3D printing, data warehouses, augmented and virtual reality, blockchain, digital dashboard and drones – all of which have cultural and creative dimensions. Urban centers will need to become smart cities 4.0 to prosper and grow after the pandemic. Smart cities 4.0 are hyper-

connected cities that use technology, data and citizen engagement and thrive with creativity and innovation to achieve the SDGs. Cities are on the frontline on experiencing the changes in a pandemic environment, affecting the nature of place, space and time. The importance of cities to advance SDG policies cannot be overstated. Smarter cities will lay the groundwork for collaborative governance in dealing with the world's most wicked problems, some of which have not even entered fully our conscience and knowledge yet.

For its part, Africa faces the most challenges in meeting the SDGs commitments – with its high levels of environmental degradation, poverty and unemployment – and the loss of cultural and biological diversity. However, social media and high mobile broadband penetration provide some unique opportunities for smart city solution and cultural heritage preservation. We should be mindful of the value of diversity, equity and inclusion to ensure that any techniques and technology are based on improving quality of life for all.

Information and communication technologies (ICTs) can help indigenous peoples preserve and share their culture and can provide a powerful platform for making their voices and interests known, while overcoming geographical remoteness and thereby ensuring greater participation in all aspects of society and interaction with the world at large.

The pandemic has upturned traditional urban development models and compelled cities to

reimagine mobility, infrastructure at large, housing, education, energy consumption and the role of culture – all of which are underpinned by creativity.

The productivity of national economies is driven ever more by digitally based interconnectedness. All types of creative and cultural activities, performances and products, if generated and driven by digital tools, are an integral part of the creative economy and hence the digital economy.

Vice versa, as the digital economy spawns new technological tools and processes, they are progressively impacting cultural and creative processes. This establishes an innate interrelationship between both. The results will be instantaneous access, repetition by choice, ubiquitous access, global sharing and education as well as learning – thanks to the panoply of digital technologies. The 'new normal' is being defined by online and streaming performances, exhibitions, auctions, conferences and many more digitised exchanges. Although digital technologies have the potential to accelerate the realization of the 2030 SDG Agenda, they also give rise to new risks, the accelerated pace of digital transformation is expected to further deepen the digital divide in many parts of the world, which could, in turn, exacerbate existing socio-economic inequalities. There has also been little alignment between science, technology and innovation, on the one hand, and socio-economic policies, on the other hand. As a result, new technologies may not necessarily serve to advance social development or improve the well-being of all people.

Culture also depends on social interaction – accomplished not only through social distancing but rather physical distancing, human exchanges among people of all ages, races and ethnicities as well as a reorientation of the world of work, influenced by creative models.

This pandemic has taught us both low-tech and high-tech lessons. It has laid bare issues of social, cultural and economic vulnerability, increasing our focus on public health, inclusion, diversity and the value and role of culture and cultural practices. It has underscored the importance of a city's social and cultural fabric and the seemingly intangible benefits of neighborhoods and heritage. The recovery from the Covid-19 pandemic provides a window of opportunity for promoting a socially just transition to sustainable development, where economic growth is used as a means to advance human well-being and capabilities, while protecting the planet. Enabling a socially just transition requires a shift in mindsets and approaches, from pursuing short-term economic and material gains to rebalancing economic, social and environmental objectives within the framework of the 2030 Agenda, in order to build a common sustainable future for all. It requires a directionality to innovation activities in order to ensure that emerging technologies are developed with inclusiveness and sustainability at their core, respect for and reinforcement of cultural diversity and to improving the well-being of all people. ■

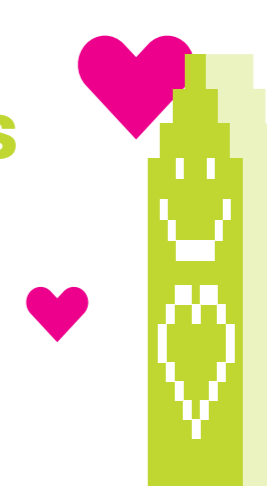
This article is based on the opening speech given by Mr Hans d'Orville at the CREATIVITY 2030 SEMINAR, held on April 29th by the International Center for Creativity and Sustainable Development under the auspices of UNESCO.

# The Small Picture

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## Cities of Hope and Happiness

By Michael C. Mitchell



**Michael C. Mitchell**  
Founder & CEO of MCM Group International. He has been a leader in green initiatives throughout his career from work in the early 1970, and is currently working on self-sustaining communities in Europe and China. He is a frequent guest lecturer at leading U.S. and Chinese universities alike. As an internationally recognized destination, lifestyle and community planner and designer, Mr Mitchell has served – among other outstanding roles as a planner and consultant – as Group Vice President of the 1984 Summer Olympics in Los Angeles, where he was responsible for the planning and support operations of the Games and its 56 Olympic venues.

Human settlements have been journeys of hope overcoming anxiety. Tied to the cycle of life, early communities reflected the human need for plentiful crops, fertile seasons, personal safety, harmonious social order and ‘connectedness’, cultivating and ultimately ensuring their sense of belonging to a place.

As the great Greek playwright and satirist Aristophanes said nearly 2500 years ago, urban planning confronts us with rational management of space, money, work and sexual relationships. This was perhaps a satirical reaction to another contemporary Greek, Hippodamus, who championed formal orthogonally planned cities, and often referred to as the ‘father’ of urban planning in western cultures. Laying out his home city of Miletus in a grid plan comprised of houses on blocks created by streets and side streets crossing at right angles, with public buildings in the city center, inspired other detractors as well – some of them highly regarded. As technological advances in warfare became increasing decisive Aristotle objected to highly rationalized orthogonally planned cities. Aristotle believed that every city should preserve irregularly planned passageways to increase the difficulty and slow the advance of invaders.

As urban complexity continually intensified over the millennium to accommodate mankind’s increasing socio-economic interactions, and as new and devastating fears emerged, ever higher orders of planning were

envisioned. When the bubonic plague struck Milan in 1484, killing a full third of the city’s population, Leonardo da Vinci was inspired to redesign the city to ward off future catastrophes and –emphasizing two basic aesthetics, cleanliness and efficiency, da Vinci imagined the city with a network of canals that would support commerce and sanitation along with a three-tiered vertical division of the built environment for movement - carts and horses on the lowest level, pedestrian traffic on the second and residential on the third.

By the nineteenth century, mankind’s technological and scientific progress had increased the complexity of the city to the point that a more comprehensive approach to city planning than even that envisioned by da Vinci was required. In 1867 the Spanish born Ildefonso Cerda, wrote the seminal work ‘General Theory of Urbanization.’ Coining the term urbanization, which he defined as “the set of principles that should be applied so that buildings and their conglomerations, as opposed to constricting, distorting and corrupting the physical, moral and intellectual faculties of social humans, can help promote their development and vitality thereby improving individual well-being, the sum total of which constitutes public prosperity.” Cerda moves the planning of cities from a profession designed to ameliorate fears and defending against the vagaries of life, toward an aspirational view that cities can and should be designed to provide the necessary nourishment of

the human spirit to achieve personal and societal happiness.

Cerda would likely never use the word “happy” as a goal of urban planning, but he certainly expressed the belief that the framework of the city was the fertile ground necessary to cultivate a well-lived life. His expansive view of urban planning went well beyond reductionist views that assessed only infrastructure, density, scale, economic return and the like to express a vision of planning that was intended to meet the needs of the ‘whole’ man. He wrote that to plan he “needed to examine everything that had been written on architecture from Vitruvius to Leonce Renaud; everything on law from Solomon to Benthan; everything on the study of society from Plato to Prohon; everything on sanitation from Hippocrates to the present day; everything on statistics from Moses to present; on geography...; on political economy...;on morals and religion...; on philosophy...; etc.” Cerda grasped this wide-ranging view of urban life by emphasizing the need for scientific rigor based upon data collection and statistics to inform whether plans meet their intended

outcomes.

During Cerda's life, only three cities in the world had a population over 1 million – London, Paris and Beijing. Today the world has 35 urban-mega centers with populations between 10 to 35 million inhabitants. China alone has 102 urban areas with populations over 1 million. Complexity in these urban centers has reached levels unfathomable to ancestral planners. In a most fundamental way contemporary urban life is now faced with existential macro questions around sustainability and with micro question centered on how we want to live.

The early 20th century urban planners continued the quest to make the world's cities healthier and happier. In 1933, the prominent French architect and planner Le Corbusier is a prime example, following after Cerda with his own treatise for the ideal city. Echoing Cerda, he wrote in his "Radiant City" that the modern city should be designed to benefit its citizens "on both the spiritual and material planes". Le Corbusier was deeply influenced, however, by the hallmarks of the industrial age – specialized functions, efficiency, simple Euclidean regularity – as he aptly said, "a house is a machine to live in." Hoping to end the slum like conditions of the working poor that had flocked to industrial urban centers and provide them with cleaner air and more verdant surroundings, he proposed a strict segregation of residential, commercial and industrial zones. His plan called for high-rise towers built

in great rectilinear blocks surrounded by open green space. Unfortunately, Le Corbusier's bias for industrial efficiency helped doom the hopes for the Radiant City. The Sighthill Estates neighborhood in Glasgow, Scotland, housing 7,000 people, the highest concentration of high rise towers in Britain outside of London, had in fact become infamous for violence, drugs and social anomie, with the tenement dwellers claiming that it had lost their sense of place and identity, and with it their dignity.

After World War II this process of urban renewal became fully internationalized. In the United States three urban renewal movements took shape. One was a result of the post-war boom which created opportunities to develop modestly priced homes in the suburbs giving inner city residents the possibility to escape dense industrial and residential neighborhoods. Another was inner city renewal which was encouraged by massive federal grants to rebuild downtowns across America in an attempt to maintain their economic viability.

The third type of urban planning strategy to save the economic value of the central business district was to use urban renewal strategies to replace old housing stock by creating a residential redevelopment ring around the city core. One of America's most famous examples of this strategy was also inspired by Le Corbusier and designed by Minoru Yamasaki in 1956 in St Louis: Pruitt-Igoe housing complex, consisting of 33 towers, each 11 storeys high. Less

than 20 years later the government destroyed the failed project that evoked no feelings of identity and control for the residents.

Since Le Corbusier, and the planners that were influenced by his perspective, we have learned much more about the interplay between plans, buildings, the urban environment and their impact on people's lives.

Although the pursuit of happiness may seem utopian to more pragmatically inclined planners focused on revitalizing neighborhoods, optimizing transport and infrastructure efficiencies, and addressing the latest round of gentrification sweeping cities, happiness has always lurked in the background of every thoughtful plan; shielded perhaps, but present in sentiments about quality of life, healthy environments, and clean, affordable residential communities. But understanding the dimensions of happiness has been nearly impossible in the past to assess along with the role that urban living played. The literature is replete with the negative impacts of urban living – higher stress, mental illness, isolation – but only recently have we begun to unwrap the societal drivers to happy living.

What is it? How do you measure it? Beginning in 2011, the UN General Assembly brought the issue to the forefront by adopting resolution 65/309 'Happiness: Towards a Holistic Definition of Development.' The next year the first World Happiness Report was published

- Wellbeing and Happiness: Defining a New Economic Paradigm,' which served as the text for the UN High Level Meeting held that year chaired by UN General Secretary Ban Ki-moon.

The World Happiness Report is now published annually surveying the degree to which citizens of 156 nations perceive themselves to be happy. The Report issued in 2020 marked the first-time cities around the world were ranked, with the analysis peering into how the urban environment affects our individual happiness. Ranking number one for 2020 is Helsinki, Finland, followed in order by Aarhus, Denmark; Wellington, New Zealand; Copenhagen, Denmark; Bergen, Norway; Oslo, Norway; Tel Aviv, Israel; Stockholm, Sweden and Brisbane, Australia. The largest population among the group was number ten, Brisbane with 2.5 million, with the mean population of the entire group being 419,000.

This correlation between happiness and city size also holds true for innovation. Many of the happiest populations are also the most creative. We encounter many of the most creative cities in the world such as Helsinki, Stockholm, and Tel Aviv from the list above. As humanity continues to be attracted to urban centers, planners need to pay considerably greater attention to the factors that make people both happy and innovative. These dynamics will become increasingly more central to urban planning in response to cities' ever-growing crisis of complexity.

As the honored chronicler of

human behavior, Shakespeare, reminds "a city is but its people." The prodigious triumphant of human settlements are not the structures and supporting infrastructure but the means they afford to make living better, by reducing fear and anxiety while increasing pleasure and happiness, through deepening our capacity to manage the continual increase in complexity. Cities, if nothing else, have been physical manifestations of hope in the future.

Though the underlying challenges of contemporary urban planning are not new, the level of complexity is. When in the past, externalities like cultural upheaval, climate change, or disease forced us to abandon our cities, or rebuild them again and again, or move elsewhere, today there is no further place to go. Our only hope is that our tools must rise to a new level of challenge. They must, in many ways be transformative. As if our 'just-in-time' culture anticipated the need to create tools to help us plan and manage contemporary cities, our tools are becoming 'smart.' They offer a profound opportunity to help us meet the challenges we face.

So where do we start? What do we need to do to develop resilient, sustainable, creative cities? And to what purpose if their inhabitants aren't happy? Designing sustainable cities, in the broadest sense of the term, begins with understanding and appreciating what comprises personal well-being.

The Global Happiness Report highlights the many elements that

lead to happiness. Stressing the intimate relationship between Happy City and Smart City, the report emphasizes the role that data-driven planning can play in creating a happy and sustainable city. The Global Happiness Report indicates that the keys to community happiness revolve around minimizing inequality, reinforcing social cohesion, providing quality education and opportunity, affordable housing, access to natural surroundings and a sense of security and safety.

Urban planners, along with all community leaders, should make every effort to produce practical solutions that can meet the requirements defined in the Happiness Report. These suggestions can be detailed into pragmatic design guidelines that include Innovation, Data, Sustainability, Resilience, Mindset, Stimulation, Digitalization, Stress, Connectedness, Identity and Scale.

Humanity is near a tipping point where the decisions we now make regarding the way we live in cities will determine their and perhaps our ultimate fates. The only question is whether we will follow Cerda's hope that cities can and should be designed to nourish the human spirit. ■

This is an edited version of the original article. The complete text can be seen at <http://city.cri.cn/20210302/65db42e9-f81f-8afb-64f1-25e8d55d3f02.html> (In English)



# Japan's Smart City Initiatives will Play Key Role in its Digitisation and Economic Revival

By Yuta Hirayama and Rushi Rama

For a country that has traditionally been attached to paper bureaucracy, Japan is finding Covid-19 is highlighting the importance of digitisation to radically transform and modernise public services, from education to health, in order to adapt to the changed circumstances the pandemic has wrought.

Despite a global reputation for impressive technological progress, Japan's public sector – and a good portion of its private sector – has been slow to embrace the digital era, even as the country's citizens become keenly aware of the need for the rollout of extensive digital policies.

That is why it is the Japanese government's announcement last year of the creation of a new digital agency to pave the way for the country's digital transformation was greeted with such enthusiasm and high expectations. New digital initiatives are being organized around a vision known as Society 5.0, which will aim to integrate the possibilities of digital technologies with human needs. It is a vision that aligns neatly with the promise of smart cities, which hold out the promise of an unprecedented window of opportunity to improve the lives of millions of urban residents while kickstarting economic growth.

It is no surprise, then, that smart city strategies are finally taking off across Japan.

## The innovators' dilemma

It wasn't always thus. Japan might be the most urbanised country in the G20, with its cities inspiring visions of our urban future for decades, yet its status as the world's third largest economy is often not matched by its cities' digital competitiveness. In a recent ranking by the influential IMD World Competitiveness Center, Japan ranks just 27th in the world in digital competitiveness.

In some respects, Japan has been caught by the innovator's dilemma. Apps that tell you how far away the bus is, are not as useful when the bus always arrives on time, every day. Paper forms are

not as bad when error rates are low. Paradoxically, Japan's ability to run its legacy analogue systems efficiently – using personal ink stamps (hanko) and even fax machines – may have left it behind the curve when it comes to the kind of digital transformation that other countries pioneered in order to deal with social challenges.

But this is set to change with the government's digital agency and other initiatives, which the new Digital Transformation Minister, Takuya Hirai, has promised will have the authority to make meaningful change to enable the government to mirror the private sector's perpetual digital transformation.

## Change from top down and ground up

In May 2020, the Super City Law was enacted in Japan. This new law aims to improve the collaboration between the public and private sectors for the digital transformation of cities. Cities selected as Super Cities will deploy AI and big data in medical care, education, energy, crime prevention and transportation, including the development and use of autonomous vehicles.

The Super City authorities will appoint 'smart city architects' with powers to coordinate services and technology in their regions. This should address two longstanding problems: getting siloed agencies to cooperate and ensuring that systems are interoperable across different jurisdictions.

While the national government is setting the tone, cities are also themselves driving change. Fukuoka, for instance, is doing away with the traditional hanko stamp required on official Japanese documents, so that forms can go digital. Kakogawa City is introducing Decidim, a platform for participatory democracy that originated in Europe. Many of these changes are being driven by a younger generation of municipal and public sector leaders who are committed to overcoming institutional resilience to radically overhaul public services through innovation and embracing new technologies.



In post-pandemic Japan, economic recovery will be a priority and such digital initiatives are seen as a way to encourage long-term sustainable growth, while meeting the needs of its citizens. Examples include:

- In Hiroshima Prefecture, a data exchange platform has been implemented under a government initiative, whereby data from more than 10 private companies are linked and analysed for regional optimisation.
- Some member cities of the G20 Global Smart Cities Alliance, such as Hamamatsu, Kaga and Kakogawa, have begun implementing local 5G and regional broadband wireless access via cable, with investment in such infrastructure accelerating.
- Tsukuba City is accelerating online medical services in collaboration with various startups.
- In Maebashi City, 155 private companies have applied to join the Super City project's public offering, indicating big interest by the private sector in smart city projects.

## Challenges ahead

In spite of these efforts, Japan's cities still face enormous challenges to become "smarter". In the past, our cities have competed for investment and recognition; working in isolation, they have struggled to formulate long-term strategies, adopt sensible technology policies and negotiate with global technology vendors. Coupled with unwieldy procurement processes, fragmented systems and dependency on legacy systems, the result in too many cases has been failure. These barriers, felt by cities all over the world, still hold back Japan's ambitious cities from the kind of transformation envisaged by Society 5.0.

With its multi-stakeholder approach, the World Economic Forum is striving to provide a solution.

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The Forum's Centre for the Fourth Industrial Revolution brings together global expertise in the G20 Global Smart Cities Alliance, to crystallize and share global norms that cities, both large and small, can learn from. Japan was an early and enthusiastic supporter of the Alliance, which was announced at the G20 Summit in Osaka in 2019.

This kind of knowledge-sharing promises to bring convergence on key issues like privacy, interoperability and business models. That convergence towards global norms is especially important for Japan. The largest markets like the United States and China can set their own standards, and the market will follow. The same cannot be said of other economies, including Japan. Failure to follow global norms could leave Japan stranded in closed-product ecosystems.

Now the Forum is seeking to bring together Japan's smart city communities to plot a more open, global future together, asking questions such as: How can we implement digital services that empower people in a global open market rather than aiming for individual optimisation? How will we promote the creation of the global rules needed to achieve this?

We welcome the opportunity that having the Global Technology Governance Summit opportunity in Japan will afford to deepen the discussion on this issue. ■



# Is Mobile Money Changing the Rural Landscape? Evidence from Mozambique

By **Catia Batista** and **Pedro Vicente**

The introduction of mobile money promoted migration out of rural areas by easing long-distance transfers and increasing resilience

M-PESA is the most popular mobile money platform in Africa. It was launched in Kenya in March 2007 and quickly became a viral success. The so-called ‘mobile money revolution’ that followed has since attracted substantial attention from economists and policymakers, as described by Suri (2017).

## Mobile money as an opportunity for financial inclusion

Financial inclusion is an important driver of economic development. It remains a challenge in many parts of the world, however, and sub-Saharan Africa (SSA) is no exception. Despite the improvements made in recent years, access to financial services in SSA is still limited. Only around one third of the adult population in the region had a bank account in 2017.<sup>1</sup> In addition, the costs and risks associated with money transfers in this region are substantial. The average cost of sending remittances to countries in the SSA is higher than anywhere else in the world, and the top ten most expensive remittance corridors in the world are all within Africa.<sup>2</sup>

At the same time, mobile phone usage in SSA has skyrocketed in the past decades and its potential in areas as diverse as financial inclusion, healthcare, and agricultural modernisation is revolutionising the African landscape.

Mobile money is a transformative idea as it makes use of basic mobile phone technology already owned by most of the poor in the world, while also providing a simple way to perform financial transactions without the need for formal bank accounts.

## The economic impact of mobile money

A body of evidence has recently been produced on the economic impacts of mobile money, linking it to consumption smoothing and risk sharing (Jack and Suri 2014, Riley 2018, Lee et al. 2021), and reduced poverty and occupational change, particularly for women (Suri and Jack, 2016). Mobile money has also been documented to promote educational enrolment, agricultural modernisation, and private sector development (Jack and Habyarimana 2018, Bastian et al 2018, Batista et al. 2019, Aggrawal et al. 2020, Batista and Vicente 2020). In different settings, Blumenstock et al. (2018) showed that mobile salary payments can increase savings due to default enrolment; however, De Mel et al. (2020) found that offering reduced fees to make mobile deposits did not increase household savings.

In a recent paper (Batista and Vicente 2021), we measure the economic impact of introducing a mobile money service in rural areas of southern Mozambique. The paper presents, to the best of our knowledge, the first experimental evidence on the impact of introducing

access to mobile money in rural locations that previously had no formal financial services available.

## Methodology

The field experiment followed 102 rural enumeration areas in the provinces of Maputo-Province, Gaza, and Inhambane in southern Mozambique. The experimental intervention was implemented in half of these villages, which were chosen at random. The intervention included the recruitment and training of one mobile money agent in each treatment location, explanations of mobile money services given to the local population through performances at community theatres and meetings, and a set of individual dissemination activities, which included support to individuals as they registered themselves for mobile money services and made trial transactions.

The outcomes of the experiment were measured using a three-year panel of administrative data, including all mobile money transactions performed by individuals in treatment and control locations, geo-referenced evapotranspiration data to measure village flood shocks, a panel of household surveys conducted before and after the baseline, and behavioural data purposely designed to predict the adoption of mobile money as a transfer and savings mechanism.

## Findings

### Mobile money adoption

We find significant levels of adoption of the mobile money service among rural households in treatment locations: nearly 87% of the treated individuals in our sample used the service in the three years after it was introduced, compared to only 1.8% of control individuals. Three years after the intervention, 53% of treated individuals were still conducting mobile money transactions. The most common transactions were buying airtime and receiving transfers – although payments also became more frequent towards the end of our measurement period.

### Mobile transfers and migrant remittances

Figure 1 displays the striking positive response of mobile money transfers received by treated rural households in our sample after large floods affected two-thirds of the villages in our sample six months after the introduction of mobile money services.

Treated households affected by idiosyncratic shocks also received increased mobile transfers relative to those in the control group. This positive effect of both village-level and household-level idiosyncratic shocks on mobile transfers was even larger for overall migrant remittances received by rural households in villages with access to mobile money services. In addition, over time, there was also an increase in migrant remittances

received by treated households unaffected by negative shocks.

### Consumption expenditure

Access to mobile money translated into insurance against both aggregate shocks (village-level floods) and idiosyncratic shocks (household-level health, death and unemployment). Although mobile money availability did not significantly affect the consumption expenditure of households unaffected by negative shocks, it increased the consumption expenditure of households coping with the additional expenses incurred because of floods, illnesses, and funerals. This stronger resilience to negative shocks translated into lower vulnerability, particularly to hunger episodes, and significant positive effects on subjective wellbeing.

### Productive activity and investment

We find evidence of reduced agricultural activity and investment in households with access to mobile money, with some business activity also being negatively affected. These negative effects were particularly strong in the second year after the introduction of mobile money.

### Migration out of rural areas

We observe an increase in migration out of rural areas when mobile money is available. While this migration is concentrated in areas that suffered from village-level floods in the first year after mobile money was made available, this effect is strengthened in the second year, also in treated

areas not affected by floods.

This result is consistent with the fact that mobile money reduced the transaction costs of immediate long-distance transfers, thereby improving the possibility of long-distance insurance, and allowing household members to invest in migration instead of in less productive activities such as subsistence agriculture.

Lessons from this mobile money experiment in Mozambique

Overall, our experimental evidence shows that providing access to mobile money in poor rural areas may open the door to household migration with the objective of taking higher productivity occupations outside of rural areas, instead of investing in (subsistence) agriculture. In this sense, our work shows how financial inclusion can accelerate urbanisation and structural change as a path for improved welfare.

Rural areas of Mozambique are still considerably underserved in terms of financial services and subsistence agriculture is dominant. While there are many similar regions in sub-Saharan Africa where our findings are likely to be relevant, it will be interesting to evaluate whether this same mechanism holds in different parts of the world at different stages of development. ■

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<sup>1</sup>According to the World Bank's Global Findex database.

<sup>2</sup>According to the World Bank's Remittance Prices Worldwide database.



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# Data — the Fuel for Creating Knowledge, Cultural Value and Critical Thinking

By **Laura Dellamotta** and **Alessandro Masserdotti**  
Co-founders of Dotdotdot

“Earth Bits — Sensing The Planetary.” Dotdotdot and Maat’s exceptional work unravels the climate crisis’ complexity with the European space agency (ESA)– International Energy Agency (IEA) and EDP Innovation’s scientific support.

## The Museum Role in Contemporary Complexity

We have more than 15 years’ experience and work in close contact with cultural institutions, designing temporary and permanent exhibitions, interactive installations and narrative journeys. The museum is a “machine” for creating, processing, and delivering knowledge to benefit collective growth. An exhibition and interaction design studio’s work makes knowledge accessible through new languages, constructing stories and giving them form in space. This is done through interactions which are often conveyed by technology and which communicate ideas and stimulate the imagination and thinking process. The museum is not merely a knowledge repository, but an open space that welcomes, stimulates and involves visitors in forming multiple levels of critical thinking — intellectual, sensory, physical. Society’s speedy evolution makes it vital to open up perspectives between past, present and future. The museum cannot be just a tool that performs functions and contains information, but a living space that changes, grows and transforms while

© Dotdotdot for MAAT: photo of the exhibition Earth Bits - Sensing the Planetary

inviting visitors to follow.

The Lisbon Museum of Art, Architecture and Technology (MAAT)’s new Executive Director, Beatrice Leanza, is transforming the museum into an open platform that invites the public to participate actively while questioning the way we live and plan our future.

Paraphrasing one of her statements — at MAAT the creative tools with which “we imagine (through art), inhabit (through architecture) and create (through technology) the world,” have become tools for spreading an in-depth understanding of our time’s complexity and liquidity.

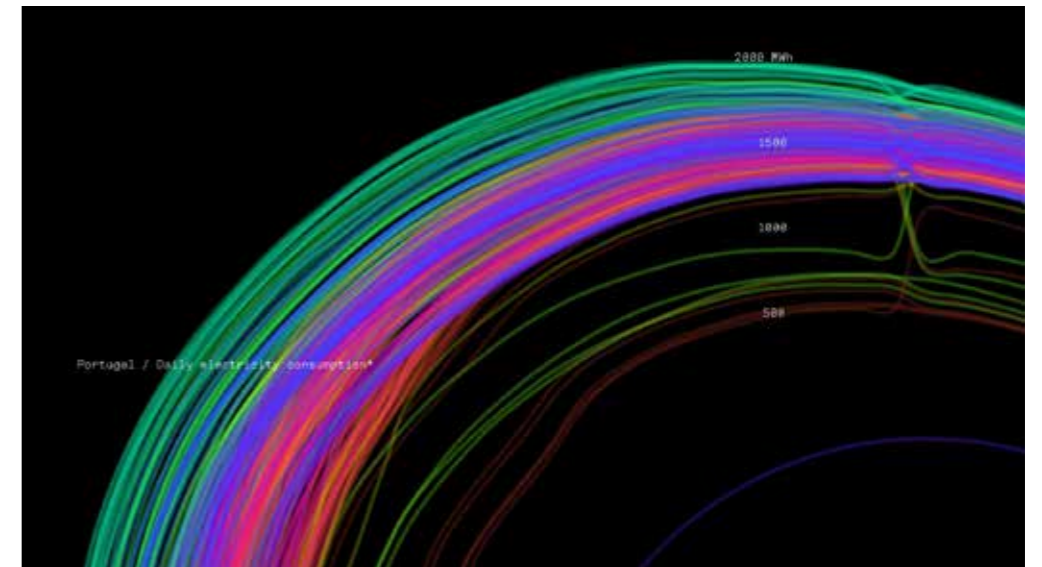
*“This is the goal I am pursuing: to turn MAAT into a facilitator. A shared platform, a meeting place, to be accessed to show us how to deal with complexity. The museum must provide tools to navigate the complexity of the present we live. It must cooperate with the ‘managers’ of the present, and it must invest in the community... The museum must be understood and experienced. This responsibility starts from the pragmatism of what a museum possesses and must be defended and disseminated to make it a binding and generating force to graft partnerships, research, and development. This ensures that it becomes “a base to navigate the present.”*

Beatrice Leanza, executive director MAAT, Lisbon (interview for Elle Decor, 2019)

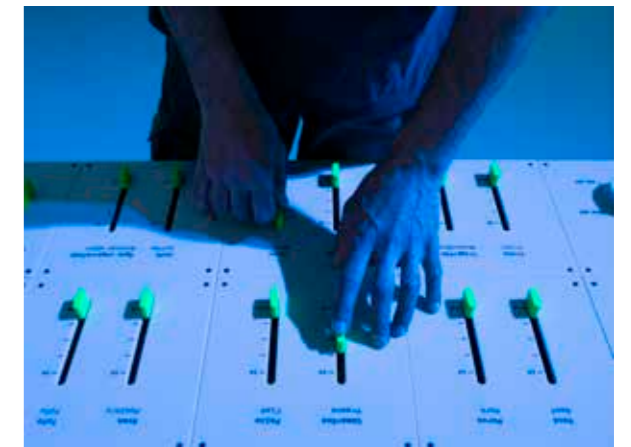
## Data as a New Form of Knowledge

Leanza’s desire to transform MAAT can be seen in the construction of a semi-permanent exhibition tackling a vital issue of our time — the climate crisis. The exhibition does not suggest solutions to the problem, but provides a focus for a more in-depth understanding based on scientific evidence, to comprehend the constant rise in temperatures, natural resource impoverishment, and the daily environmental repercussions we are witnessing. It was necessary to put in place partnerships and an exchange process with research centres and scientific partners, to understand the complexity and transfer knowledge to the general public on a scientific basis. EDP Innovation and EDP Sustainability are EDP — Energias de Portugal divisions who handle environmental research, development, change, and sustainability, and it is the company of whose foundation finances the MAAT museum.

For more than a year, we have been dialoguing with the EDP Innovation scientific management to understand the climate crisis complexity based on a scientific approach. We deduced information and structured a storytelling to transfer it into the exhibition, starting from their research and data. Under the MAAT curatorial supervision and artistic direction, we designed a journey based on objective data to be explored with all the senses, to gain knowledge and critical thinking about our present and most desirable future. All this was only made possible thanks to the unprecedented involvement of prominent partners such as ESA — European Space Agency, IEA — International Energy Agency, with whom we created the contents of two installations from scratch. “The journey unfolds in space in a narrative climax that starts from becoming aware of the seriousness of the environmental crisis (Power Rings; 24 hours — The ecology and energy of our flux), to understanding the impact of our choices on the planet, as citizens and consumers (The Co2 Mixer). It concludes with a perspective leap on a cosmological plane that offers a contemplative global vision of the impoverishment of the Earth at



© Dotdotdot for MAAT: detail of the exhibition Earth Bits - Sensing the Planetary



© Dotdotdot for MAAT: photo of the exhibition Earth Bits - Sensing the Planetary

*the humanity’s hands (Planet Calls).”*

Federica Mandelli, Storytelling and Communication Manager  
Dotdotdot

Through four digital and interactive installations, Earth Bits — Sensing the Planetary stimulates reflection on the relationship between science, humanity, nature and technology. It makes technology an extension of the human capacity to help understand and preserve our planet rather than a tool for domination. Science and technology are continually gathering information to monitor our relationship with the world, offering an objective and more in-depth knowledge.

One of them is the European Union's and ESA's Copernicus Earth observation programme, which provides scientific data to improve environmental management and mitigate climate change effects, ensuring global civil security.

The ESA Copernicus programme, whose data we used to design the Planet Calls installation, generates 12 terabytes of data per day from six satellites called Sentinels. The Sentinels scan the earth and release open data to provide accurate and timely information on our planet's health.

It has been undeniable for a decade now that we live in an era of incredible data production, and if it is true that data is considered the new oil (C.Humby, 2006) then, it can also be regarded as a new form of knowledge. We daily produce more than 2.5 quintillion bytes of data, and this pace is only accelerating with the growth of the Internet of Things.

In the last century, science was based on empirical processes of calculations and mathematical formulas that humans could manage. Today, the use of technology is essential to handle the immense amount of generated data. It is increasingly necessary to use algorithms based on artificial intelligence to manage the mass of information and provide statistics.

We can say that Kepler was the first researcher to make a data-driven scientific discovery from data collected by the astronomer Tycho Brahe on the planets' position. In Kepler's time, the problem was to make sense of the data, which was still humanly manageable. Today, data is too complicated and in vast quantities. It has become obscure and distant if it is not reworked and "processed" before being made available to people.

Data is paradoxically esoteric. Without technology, science would not be able to become aware of data today, make decisions or discover things from it. We have reached a point where scientists need to be "helped" to manage the mass of data by artificial intelligence and machine learning algorithms, whose processes are far from being precise and controllable.

Data holds a vast amount of potential value, but no value can be created if the information is not extracted and translated into knowledge, brought closer to people and made accessible.

### Designing to Translate Information into an Experience

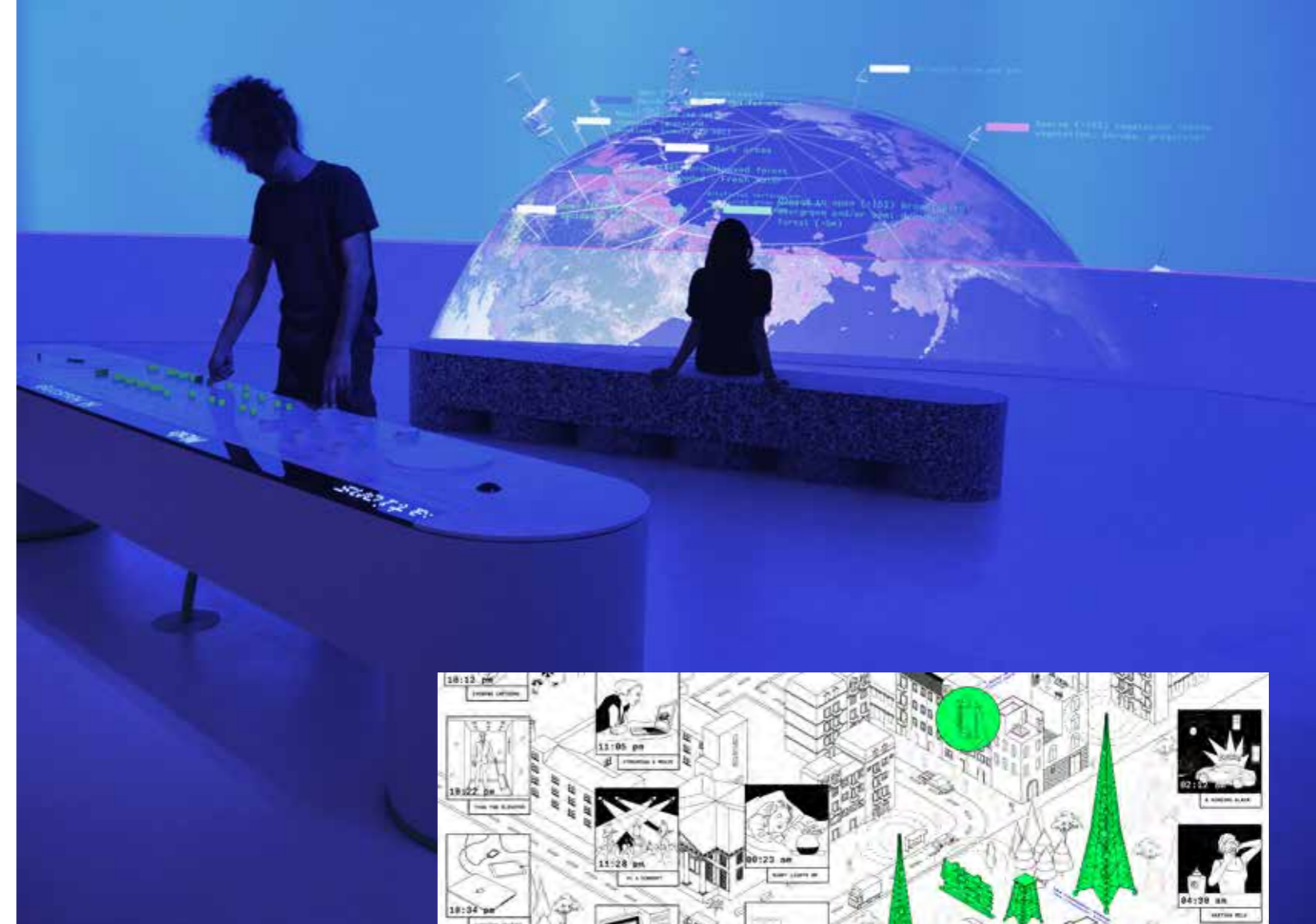
This is where design plays a key role, and an example is a process Dotdotdot put in place in designing the Earth Bits exhibition for MAAT using the unprecedented support of scientific partners for data analysis to provide scientific information understandable to people through an exhibition journey.

Our role as designers was to facilitate the flow and translation of scientific data as an engine to create knowledge, cultural value and critical thinking. Not by merely transferring information or providing solutions, but by creating a new grammar to communicate the coordinates needed to read the complexity of our time, raising questions about the future through multimedia languages that work on our multiple learning levels.

MAAT Visitors are invited to explore and experience knowledge with all their senses through digital installations, graphics and animated videos, created thanks to EDP's data and scientific support. An interactive station allows visitors to mix IEA data like a DJ to understand the impact of their lifestyle and the consumer industry on the world. They are further guided by data sonification and generated soundscapes. A digital wallpaper "painted" with data from the ESA's Copernicus programme Sentinels helps understand the historical correlation between the increase in anthropogenic greenhouse gas emissions and the increasing occurrence of environmental phenomena such as floods, droughts and fires.

It is a data-guided narrative journey which shapes space and becomes knowledge in a story where multimedia and transmedia contents become emotional and teaching material, allowing extensive use and immediate understanding.

Designing narrative experiences based on scientific evidence, such as Earth Bits, uses the museum vision to stimulate critical thinking by going beyond the simple staging. Instead, it constructs a story to be explored through



# Building Sustainably: Is It Really Possible?

By Maria Francesca Tatarella



TECLA - Technology and Clay  
3D Printed Eco-sustainable House  
Architectural and Furniture Project by mearchitects.it  
Collaborative 3D Printing Technology Project  
by WASP - 3dwasp.com



## Interview with Mario Cucinella

By Maria Francesca Tatarella

**MFT: How was Tecla's project born?**

**MC:** Tecla was born from a work by WASP (World's Advanced Saving Project), an Italian company that produces and works with large 3D printers, who wanted to use raw earth as a material to 3D print, and approached my studio for input on how to work with this material. I started working with professionals from my studio and SOS - School of Sustainability, which I founded in 2014, and after a year of research Tecla was born: an architecture that is effectively carbon neutral precisely to meet the demands dictated by the environmental agenda.

Our research focused primarily on design, working on the shape of Tecla, so as to make this

architectural object adaptable to any kind of climate so that it can be realized anywhere in the world. For example, if a Tecla housing module is installed in a typically tropical climate zone, it will be necessary to increase ventilation and work on a different chimney shape, capable of letting a greater amount of air circulate inside. In this sense, we have followed the teaching of Prof. Stefano Mancuso, who studies how plants adapt their shape to the conditions surrounding them, and we wanted to break a classic paradigm of architecture: we started analysing climatic data, from which we would define the shape of the building that is then printed.

**MFT: What are the many aspects that make Tecla sustainable?**

**MC:** First, Tecla is sustainable because of the material used to build it. In fact, building materials can have a particular environmental impact due to two main factors: the emissions generated during their production and the emissions generated during the process to transport them to the project site. Tecla is made with raw earth, a locally sourced and unprocessed material. For example, it is not baked, so it does not release CO2 not even during the preparation phase. The only transportation required, if any, is that of the 3D printer necessary for its construction.

For this reason, Tecla certainly represents for us a response to the needs outlined in the UN road map. Reflecting on this point, during the research phase, we asked ourselves if what we kept doing so far in the architectural field or in the building sector in general is but unnecessarily complicated. Surely Tecla can be an answer to this and other questions to work on for the next 30 years.

**MFT: Have you already had any requests to build Tecla? From where in the world, and from what type of players?**

**MC:** We've already had a lot of requests, especially from the United States, Chile and Australia, which are the places where entire eco-villages are increasingly being designed and where there is an extremely high attention to these issues, and to the values they carry with them.

However, there is still a process to be completed, especially in terms of legislation. It is necessary to obtain for Tecla a certification that ensures its full compliance with safety standards, based on specific tests that unequivocally establish the safety of architectural artifacts made with this construction method. At present France and Morocco are the countries that, from this point of view, given their consolidated tradition of earthen constructions, are more advanced in terms of this type of legal framework.

Furthermore, we have entered a second phase of research in which we are combining earth with other materials, in particular with natural fibers such as hemp and flax, which increase the structural strength of the earth compound and, being completely different from petrochemical-based materials, also further strengthen the complete sustainability of the materials used.

**MFT: While Tecla certainly represents a new way forward, which interventions do you envision on well-established cities instead?**

**MC:** Undoubtedly, the UN 2030 Agenda is a general document, but I believe it is a fundamental basis to be then downloaded onto real cities. When doing so, all the actors involved must take into consideration the specific characteristics of each city. I think it is important to refer to the existing architectural heritage to try to carry on an effective discourse about regeneration, which in some cases may mean demolishing and replacing or adopting adjustments, so to speak, precise interventions aimed at making existing buildings more sustainable, working for example on energy performance.

I firmly believe that making existing buildings

“healthier” is the first real step of a Welfare strategy, also because new constructions represents a very low percentage compared to the existing built environment.

As far as cities are concerned, a first action to be undertaken is certainly relaunching the suburbs, populating them with the same quality of contemporary architecture: for example, by inserting services such as schools, buildings for public use such as museums or nursing homes, health clinics, so as to relaunch these parts of the city which, compared to the historic city, have always been more neglected from this point of view.

My studio is currently working on a project in a suburban district of Milan: Bisceglie. It involves the construction of six-storeys residences where the housing units are all equipped with terraces and where all buildings overlook a public park where you can walk, spend your free time, where children can play freely. The project is studied in every detail so as to allow its marketability at an affordable price, precisely because quality is not reserved exclusively for the central areas of the city.

Besides urban regeneration, one could almost speak about human regeneration.

This also includes the issue of public health, and it requires administrations, architects and urban planners to pay special attention to people's lives and try to understand how each community functions.

We could think, for example, about what activities can be done in a minute's distance, especially in megacities, to ensure that each part of the city has its own autonomy.

We want to propose the planning model of the 15 minutes city, but we need to understand how to implement this type of model in practice. Going back to the analogy with the plant world, I believe that the city should be read as an ecosystem where all beings are autonomous, but their survival is interconnected to that of the other co-existing species.

Well, the suburbs today, in almost every city in the world, are not interconnected, so this is where we need to focus our attention: on finding a balance within the urban fabric in which we live, looking for a point of interconnection between the various parts of the city as if the city were a living organism. To be sure, nature can be a very strong element of interconnection, the one which is able to increase the degree of sustainability of our cities, now and in the future.

## Interview with Tiziana Monterisi

By Maria Francesca Tatarella

**MFT: What is Ricehouse?**

**TM:** Ricehouse is an innovative startup born in 2016, which works on architectural and construction projects with the aim of having a positive impact on society by promoting responsible change. It is a concrete example of a company that works entirely according to circular economy principles and that deals with natural architecture by enhancing the by-products of rice processing for the construction of buildings, thus affirming the real possibility of creating new housing models and proposing a de facto possible alternative to the use of materials of petrochemical origin.

The frame in which we work is very well defined because from the beginning we wanted to work by placing ourselves totally in line with the objectives set out in the UN 2030 Agenda for Sustainable Development. This precision has allowed us, in recent years, to see our work recognized with prestigious awards in the field of environmental sustainability.

On one hand, we therefore promote an ethically transparent, culturally rigorous architecture with an economic-financial vision aimed at favoring local materials, re-establishing a strong link with the territories in which we operate, whether in the city or in the countryside. On the other hand, thanks to the use of cutting-edge technologies and a strong sense of responsibility in relation to the environment, we can carry out projects that are effectively sustainable from an economic, social and environmental point of view, capable of self-supporting with a truly negligible waste of energy, whether we deal with new buildings or with interventions on existing ones.

**MFT: How is Ricehouse organized, it does seem to me that it is much more than a traditional design studio, isn't it?**

**TM:** Ricehouse has grown a lot in recent years, greatly expanding and also diversifying its clients. Precisely with the intention of satisfying our customers' numerous needs, we have structured the company according to three different business units: product, project and open innovation.



The first is dedicated to the development and marketing of 100% natural building materials with particular attention to the use of secondary products of rice production with characteristics of high energy and acoustic efficiency, living comfort, healthiness for different spaces, eco-compatibility and deriving from a short supply chain. The final intent is to propose, through the use of these materials, the creation of “Rice Houses».

The second business unit offers consultancy services for the design and construction of buildings according to the principles of bio-architecture. It is made up of a team of architects, specialized in natural construction, who accompanies customers from the preliminary design phase to the construction of self-sufficient buildings in complete balance with the eco-systems present in nature, intervening both in renovation and in new buildings, in public and private buildings alike.

The last unit, open innovation, offers consultancies to companies in different sectors - from design to fashion to health - who want to use by-products deriving from rice processing, thus collaborating in the development of innovative solutions in the various fields that are able to modify traditional design solutions according to the new paradigms of sustainable development.



**MFT: What is the project you are very satisfied with?**

**TM:** Undoubtedly Casa UD in Chamoix which, in 2017, also won the “Sustainability Award», organized by AESS, the Agency for Energy and Sustainable Development of Modena, Italy, in the “Residential construction - renovation and restoration” category. It is a house in the mountains built on a land where a cottage was demolished whose stones have been entirely reused in the new project. It is a totally passive house; the energy requirement is extremely low thanks to the high insulation provided by the straw infill of the frame structure and the cellular glass against the ground.

It does not require a heating system as it uses the passive contribution of the sun, ventilation and natural lighting. In addition, the load-bearing structure of the roof and perimeter walls was made of carpentry with prefabricated frames in wood and straw and assembled on site in just 4 days, transporting the elements by helicopter given the difficult accessibility to the site. Thanks to this operation, the environmental impact was reduced to a minimum as only materials of natural origin with low gray energy were used.

The set of formal and material choices were dictated by the desire to reinterpret tradition using ancient materials in a modern way. The wooden surfaces have been treated with natural oils, while the walls have been completed internally with clay and paints deriving from vegetable chemistry. Thanks to a very enlightened client, who left us free to experiment, we made an excellent project.

**MFT: Is Ricehouse’s project sustainable also because it obeys the criteria of circular economy?**

**TM:** Yes, sure. Every time we work on a product we think about its entire life cycle, including its disposal, and to minimize if not eliminate waste. Our materials tend to be 100% recyclable and those linked with geo-polymers can be shredded and used as aggregates to make road foundations, thus passing from the construction sector to the infrastructure sector. Obviously, for us the project is part of a broad and interdisciplinary vision not only because we make use of consultations with professionals from other disciplines to perfect our techniques and our products, but also because we look to other sectors of the industry that may be adjacent to ours at any time of its development.

[ricehouse.it](http://ricehouse.it)

**MFT: What obstacles have you encountered, if any, in using your own materials?**

**TM:** Obviously, we encountered the greatest difficulty from a regulatory point of view, but we did not stop in front of this obstacle, on the contrary it was an incentive to test our products and lead them to have the suitability certifications and to also be certified with the CE marking. This is obviously very important in order to be able to sell our products without worries as well as obviously using them in our projects.

Another problem which immediately turned into an immense resource, was that of collecting sufficient scientific data to work with our products. Today we work in collaboration with the ETH of Zurich as far as Carbon Neutrality is concerned for example, and we can safely say that, for example, husks and straw actually “seize” CO2, this means that for a ton of unburned material, the emission of 1.47 tons of CO2 is saved. Collecting this type of data is essential for us to proceed in research and innovation, as well as to affirm our commitment to the planet. As a matter of fact, associations such as My Carbon Zero for example recognize, for each ton of CO2 seized, 30 euros to be reinvested in social and environmental projects.

From a point of view purely of design, with these certainties behind us, we have been able to move on by proposing different “recipes” with our materials, also coupled together, to generate more products that guarantee us and the customer to have truly sustainable projects. Suffice it to say that wooden buildings today do not have the same type of guarantees that buildings made with our products have, because we have not been able to prove the Carbon Neutrality of this material in the LCA (Life Cycle Assessment) which is usually estimated at around fifty years. The truth is that once the useful life of the building is over, wood can hardly be recycled.



## Interview with Francesca Galati Bolognesi

By **Maria Francesca Tatarella**

**MFT: There is a lot of debate today about sustainability in general but with a particular eye on building projects. Can the sustainability of the built environment be measured? Are there protocols, parameters, objective data to also make comparisons?**

**FGB:** As a matter of fact, sustainability seems to be a front-page topic nowadays. As far as the whole field of architectural and engineering design of buildings in its entire process is regarded, but also in interior design, especially in retail design and infrastructures field, it is necessary to emphasize some central aspects of the concept of environmental sustainability. The impact that the construction of an architectural artifact generates on the environment is absolutely measurable according to many parameters on which you can work by following ad hoc protocols, such as the LEED protocol. This protocol allows you to work optimizing energy efficiency, the use of sunlight and the use of water. It also works for the choice of the best site and for the selection of low-impact materials and for a facility management expressly oriented to the reduction of consumption and waste. All this is measured according to specific values that allow the project to be assigned a specific score according to which different degrees of sustainability certification can be obtained. In particular, today - after having faced a pandemic that has heavily impacted on the whole world - LEED certification protocol contemplates above all comfort for people who live and work in buildings every day, putting at the center of the investigations the healthiness of the air and the measures of management aimed at ensuring the health of workers and users.

**MFT: The best way to apply these protocols is therefore to intervene early in the design phase, or can one intervene even when the project is already defined or even during the construction phase?**

**FGB:** The best would be obviously to be able to support the project team starting from the concept phase so as to be able to evaluate together with all the consultants how to optimize design solutions,

material choices, types of systems to be installed. This would allow to have extremely efficient buildings and also to be able to do more, assuming adequate management, to maintain high standards throughout the useful life of the building. However, with FGB - Future Green Building - Studio and the team of professionals who work with me, we are used to intervening even in more advanced stages of project development, often even directly in the construction phase, still obtaining excellent results from the point of view of the environmental impact of the project and healthiness for its users.

**MFT: In your opinion, is it possible to make all the existing building heritage, which still represents most of the built patrimony today, less impactful from an environmental point of view?**

**FGB:** It is possible, and I think it is a duty to take care of existing buildings. I am now working with my team in the retail sector, especially in fashion and luxury industries which are sensitive to the issues of environmental sustainability, comfort and healthiness of their spaces. In these projects, we reach excellent performance both from an energy point of view, and in terms of careful management of resources such as water and waste disposal control. We also developed an in-house monitoring system for all kinds of consumptions and air quality monitoring that works in real time, and we defined a strategy that uses «knowledge» of how spaces work, derived from real-world data, to outline best management practices and ensure reduced impact.

The post-Covid has amplified a collective consciousness not only on environmental issues but also on the protection of people’s health, and I am witnessing a significant increase in interest in the certifications that we follow with FGB Studio, with concrete requests coming from both private individuals and institutions. It is the case of Ferrovie dello Stato Italiane Group (Italian State Railways Holding Group) which obtained, first group in Italy and in Europe and second in the world, the WELL Health&Safety certification aimed at guaranteeing the healthiness of the workplace for employees and users who benefit from the services.

[fgb-studio.com](http://fgb-studio.com)



# Floating Music Hub in Cape Verde



NLÉ, the design and development practice for innovating cities and communities led by Kunlé Adeyemi, is about to complete its latest MFS project (MFS™ IV), a Floating Music Hub in Mindelo Bay on the island of São Vicente in Cape Verde, West Africa.

The project is scheduled for completion this year. Once completed, it will mark another milestone in NLÉ's development of the Makoko Floating System (MFS™), which was first presented in 2013 with the international award-winning Makoko Floating School (MFS™ I) in Lagos, Nigeria.

Makoko Floating School evolved into Makoko Floating System (MFS™), a simple way to build on water by hand. NLÉ learnt from the people of Makoko and improved the process

into a flat-pack system, prefabricated, easy to assemble and disassemble. MFS™ has since been built in five countries across three continents, tested in different environments and with different local materials, demonstrating its potential for diverse regional adaptation and wide range of uses such as housing, healthcare, education, culture and hospitality.

Now for the first time, having been built in a variety of water bodies including lakes and a lagoon, MFS™ is built in the Atlantic Ocean - a new territory - marking the return of Makoko Floating System to the African continent.

Floating Music Hub is conceived as a cultural and creative platform. It comprises three floating vessels of

different sizes: the larger vessel will contain a multi-purpose live performance hall, the medium-sized vessel will be a professional recording studio, and finally, the small vessel will be a food & beverage bar. The three floating structures will form a communal cluster around an isolated triangular floating plaza, creating an open space for small to medium sized gatherings.

Established for ADS Group - Africa Development Solutions, the Floating Music Hub again builds on NLÉ's goal to shape the architecture of



developing cities. It also marks another milestone in NLÉ's African Water Cities project, an ongoing research and documentation project started by Adeyemi in 2011 that focuses on adapting coastal cities to the impact of urbanization, resource shortages and climate change.

The impact of rapid urbanization and economic growth of cities in Africa cannot be over emphasized. At the same time the impact of climate change has become day to day reality, particularly in coastal African cities that now experience significant

increases in sea level rise, rainfall and flooding.

When NLÉ began Makoko Floating School in Lagos, they saw the innovative and resourceful living in the informal water community of Makoko, and immediately saw the potential. With Makoko Floating School as an urban, sociocultural, political and economy catalyst, NLÉ explores this territory as a contemporary model for adapting coastal African cities to the impact of climate change in the age of rapid urbanization.

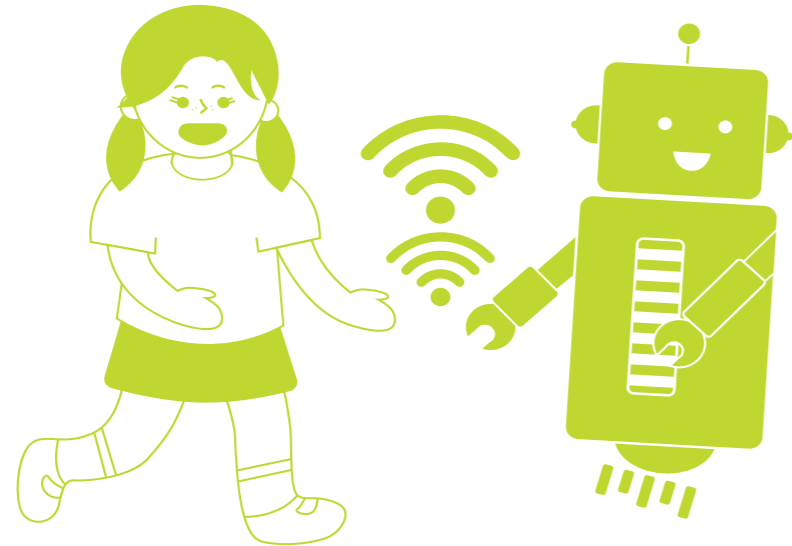
Adeyemi has continued the research in the past nine years at the various institutions where he has taught. He took students to different cities: Durban with

Harvard, Abidjan with Columbia, Lagos with Cornell, and Mindelo with Princeton. To date the project has moved away from just research and documentation to also architectural forms. These have been realized in the award winning Makoko Floating School in Lagos, Nigeria (2013) and more recently the Chicoco Radio in Port Harcourt, Nigeria (2014) and the Chicago Lakefront Kiosk, USA (2015). ■

[nlworks.com](http://nlworks.com)

# Empowering Women through Design Education

An Interview with **Roya Mahboob**  
By **Alice Rawsthorn**



Among the most heartening stories of design resourcefulness during the pandemic is that of the five Afghan girls, aged 14 to 17, who have spent months designing and building emergency ventilators in the city of Herāt. All members of the Afghan Dreamers team of young star roboticists, they are working on the ventilators as part of a series of projects organised by the tech entrepreneur, Roya Mahboob, chief executive officer of Afghan Citadel Software, in her philanthropic role as founder of the Digital Citizen Fund, which enables women and girls to learn more about technology to improve their technical literacy and employment prospects. Mahboob spoke

to Alice Rawsthorn about the Afghan Dreamers' ventilator design project and her belief in the importance of educating girls in design and technology.

**AR: You are involved with a number of design programmes that are seeking solutions to some of the problems posed by the pandemic. Could you tell us about them, starting with the Afghan Dreamers' emergency ventilator design project?**

**RM:** At the end of March, Abdul Qayoum Rahimi, then-governor of [the north-western Afghan province of] Herāt, put out a design challenge because there were very few ventilators in the region, which had a large number of cases of coronavirus. He was talking with doctors in Herāt, who were aware that the situation might be out of control. So, they put out a challenge to design open-source emergency ventilators and asked universities, manufacturers and the Afghan Dreamers to participate. Five members of our team responded to the call and started to build the ventilators.

**AR: As many of the world's most powerful and well-capitalised manufacturers have discovered, it is incredibly difficult to design and build emergency ventilators. Not only do the Afghan Dreamers face a tough design challenge, they are tackling it in deeply difficult conditions having begun under lockdown. What extra levels of difficulty has this added?**

**RM:** When the Afghan Dreamers started working on the ventilators, there was a lockdown in Herāt with

many restrictions. The shops had closed, and it was a big challenge to find parts as we couldn't go onto the streets to find them and didn't know what was available.

When you design any product, you need to have an idea of what's on the market, so you can build it based on the available parts. That was the biggest problem for the team. And, of course, their families were worried every time the girls left home, about security issues besides Covid-19. At the beginning, we had to fight to persuade them to allow the students to work on the project. We had to bring the girls to the office, but only had one car permit that allowed one car to go around the city. Another challenge was that we didn't have the facilities to build some of the parts, so we had to go to a workshop 20 minutes outside the city.

And the most important thing is that we didn't have access to some of the parts that are critical to building open-source ventilators: the medical sensors. Unfortunately, we couldn't find them in Afghanistan. Indeed, we had to order them. Thank God they arrived. There were all these obstacles, and then of course, funding was another, and then none of us, none of our mentors and coaches, had worked on ventilators or any medical devices in the past. So, it was quite new and very challenging, but the girls were determined to work on this project.

**AR: As you mentioned, Herāt has been one of the places in Afghanistan to be worst affected by Covid-19. As infections have continued to rise, what additional pressures have you faced?**

**RM:** It actually encourages the girls to continue to work, when they see the numbers are increasing, especially now that people are treating the disease seriously. Unfortunately, people were careless before and it infected many, including some of the students' family members, and even our mentors. It's the worst part of the work, but it also makes the students more determined to continue. But then, of course, you need to have the cooperation of the governor, you need to have the cooperation of the hospitals and doctors. And right now, the situation is that you can't find doctors, because they are very

busy with patients and they don't have enough time to come and test the device. Of course, we appreciate their time and understanding, but the situation seems to be out of control. Obviously, we have to be careful because this is a medical device and it should be tested thoroughly before being used. It could reduce the load of existing ventilators to help people who are in respiratory difficulty but not in critical condition. It is an automated add-on solution to a pre-existing bag; we call it the bag-valve-mask. It could be used in an emergency situation when a physician is present.

**AR: What is the current status of the project? As I understand it, there is political support for it within Afghanistan and a determination that it will proceed.**

**RM:** At the beginning, the former governor of Herāt was very excited because it was his plan. Then when he left office, we didn't have that much support from the new governor, or even from the hospital, because the girls don't have medical engineering degrees.

However, we have assembled a team of engineers who support us and fortunately, two weeks ago our president, Ashraf Ghani, mentioned in a cabinet meeting that he wanted the minister of health to look at our device and to support us. That meant a lot for us. We are very happy about that, and with the first devices we have built. They have some functionality, which is good, and now we are working on the second prototype. We did a test ten days ago in a hospital in Herāt, which the doctors are very happy with. Next, we need to work on a second version, which is to make the ventilators clinically available in hospitals; we were waiting to receive the pressure sensors for this.

**AR: What lessons have you learned from this? Clearly this is a remarkable project conducted under truly extraordinary circumstances that we hope will never be repeated, but what do you feel has gone well, and what do you feel you would tackle differently, should you approach anything like this again?**



**RM:** We've learned a lot. One thing is that we have to think very fast and we have to make decisions fast. Another is to look at what's really available in the market and which resources we have access to. The first two months were very, very difficult for our teams, but we connected with so many people around the world.

We learned how to ask for help, and that people are willing to help no matter where they are. And that even if they are not in Afghanistan, they are ready to support us.

Also, I think that if there is no pandemic, we will be a little more conservative when we next choose our projects, to make sure that our team and our resources will be available, and that we have enough support from the government and the community. The first month was very difficult because the governor changed, and

the local hospital didn't support us. But right now, people are happy with what the girls are doing. It has taken a long time, and some people are still sceptical, which I understand, but the government is supportive and, at least, allows the teams to work and to test the ventilators. So, I think that this process has been educational for us. But it is also a great opportunity for us to show, as responsible citizens, what we can do for our community. I'm really very proud of these girls. They are very young, the youngest is 14 years old and the oldest is 17 years old. But they had the courage to do this.

They said: 'This is what we can do. This is our ability. Now we have to help our doctors and our nurses, and we have to help our government and our community.' That's how they started. When we didn't have motors, and I told them that we didn't have enough resources, they said they were going to look for them in local markets and to find the gears from motorcycles. It has been interesting to see how they can find parts and put them together.

They did the research to build one type of ventilator, then had more time to research and got inspired by a design from a team at the Massachusetts Institute of Technology (MIT), so they changed their design, and now they're working on a new one.

**AR: It's an incredibly inspiring story. Many people have been touched by their dedication and courage. But you began a couple of other Covid-19 design projects as well. Could you tell us about them?**

**RM:** We are working on a couple of other projects. One is an experiment with using UV-C light, which

kills infection. Right now, another group of Afghan Dreamers is building two devices: a scanner and a robot that can be used in hospitals.

**AR: You have had a phenomenal career in tech and design. What motivated you to found the Digital Citizen Fund, and to try to help other women and girls in Afghanistan to become tech literate and to pursue careers in technology design?**

**RM:** I started with one dream and one goal. The dream was to make technology accessible for everyone. And the goal was to give access to technology and education to every woman, regardless of their social status and especially in Afghanistan.

Technology changed everything for me, professionally and personally, ever since I was 16 when I was introduced to this magic box. I think it is a powerful tool for women, especially in a conservative country. We have helped 15,000 girls to date, by educating them between the ages of 12 and 18. They learn how to work with computers, to build websites and games. They also learn about financial literacy, how to manage money, and how to start up on their own as entrepreneurs. Last year, more than a hundred of them started their own small businesses, which we're very proud of. Then, of course, we have official teams like the Afghan Dreamers, who are working on robotics, and another team of girls who are building games.

**AR: Could you tell us about your plan to open an Afghan Dreamers Institute in Kabul to boost STEM (science, technology, engineering and maths) teaching in Afghanistan?**

**RM:** We are working on building Afghanistan's first school of science, technology, engineering and medicine focusing on AI robotics, blockchain and cybersecurity. Fortunately, the Afghan government has given us a piece of land at Kabul University for the institute. We are trying to offer world-class education to Afghan students, focusing on women's access to resources in the STEM field.

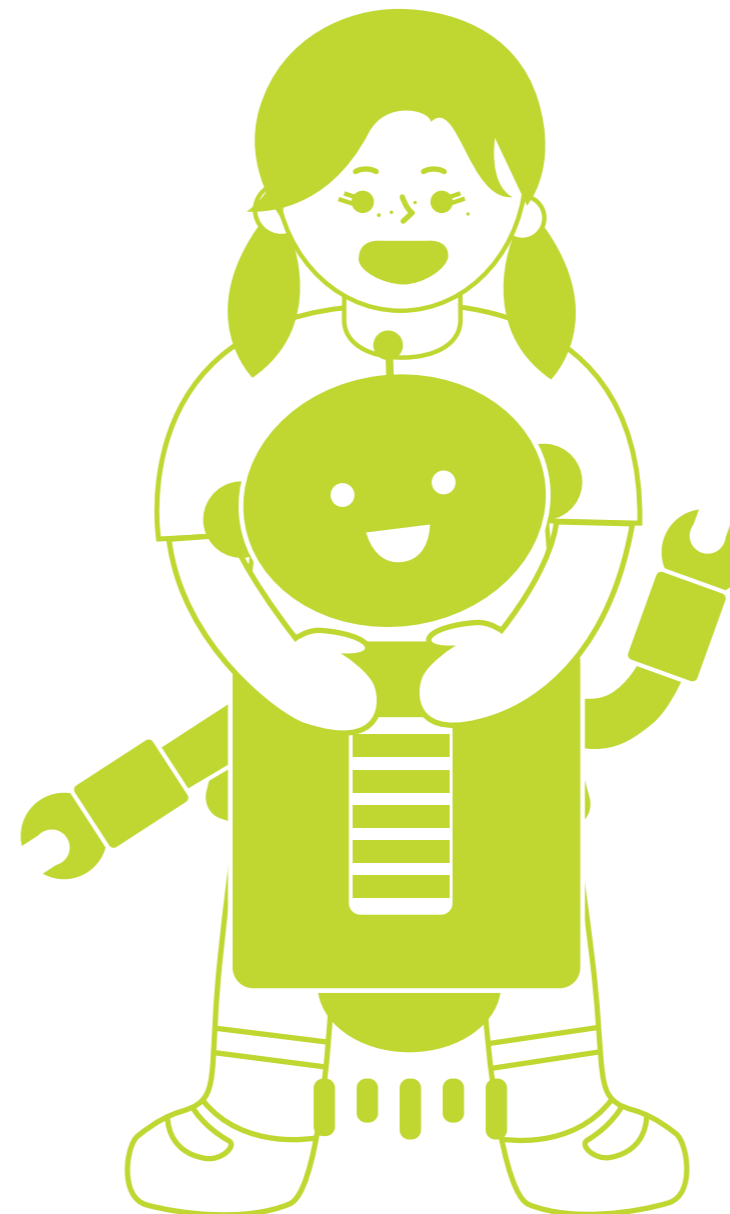
We seek to develop a foundation for lifelong learning and to promote economic development. And we believe this could be resolved by scientifically informed citizens and a creative, solutionseeking population that is trying to bring positive change.

And, hopefully, the Afghan Dreamers will be Afghanistan's future scientists, entrepreneurs and mathematicians. We'll start fundraising for the institute after this pandemic.

**AR: How has your experience of the pandemic, and of the design responses to Covid-19 you've championed, affected your ambitions for the Digital Citizen Fund?**

**RM:** Before this crisis, we were organising a big conference, the Brite Initiative, to build resilience in technology, innovation and entrepreneurship. The idea was to showcase Afghan girls' talent in technology, entrepreneurship and art using robotics or anything else, and to write a declaration that policymakers and donors should invest some part of their money in future jobs.

That was our mission and opportunity, but



because of Covid-19 everything has been postponed – until next year, hopefully. I think that after the pandemic, people will understand the need for STEM education, and its power for Afghanistan. The girls who are working on the ventilators are all under 18.

Because they have experience and have had access to knowledge and education, they feel like responsible citizens working for society. This might send a big message to the government, governors and policymakers that they have to pay attention to the younger generation in Afghanistan. More than 27 million Afghans are under 25 and it is our government's responsibility to pay attention to their education, because we all rely on this young generation for Afghanistan's future.

**AR: The Afghan Dreamers are demonstrating this with great aplomb. It is clear that the areas you're focusing on – AI, robotics, blockchain and so on – will have huge growth in the future, but why do you believe they will be particularly important to Afghanistan? Is it related to Afghanistan's cultural or artisanal traditions, for example?**

**RM:** I'm Afghan, I grew up in this society, I feel responsible for my community and I've seen how powerful technology has been for many others. We have done a lot of projects here in Afghanistan, like Afghan Dreamers, that have had a huge impact.

But Afghan Dreamers won't only be in Afghanistan, we believe that it should be implemented in other developing countries, whose younger generations need it. The idea of the Brite Initiative was to invite policymakers from the region to discuss this. I feel that in order to compete and prosper in the 21st century, more countries should be able to access the groundbreaking technologies that are transforming our world, but unfortunately, that's not the case today.

There is a huge gap between the richest and poorest countries and huge gaps within those countries that increase every day. I started in Afghanistan because I have connections and resources

here, and many years of experience of working in the tech sector. But we are already working in Mexico, trying to start the Mexican Dreamers Innovation Lab, and we're making sure that we will be able to help dreamers in Pakistan, Palestine, Iran and other countries in this region, Africa and South America too. ■

[digitalcitizenfund.org](http://digitalcitizenfund.org)

# China Logs

中国  
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## Reframing Chinese Villages

By Anna-Paola Pola



On June 6th, 2019, the Ministry of Housing and Urban-Rural Development of the People's Republic of China published the latest collection of a long list of Traditional Villages on its website [1]. In total, 6,819 small settlements now boast this title, each one benefiting from a three million yuan subsidy (440,000 USD) that comes with the nomination.

The list of Chinese Traditional Villages is not the only existing list, as the creation of national records of model villages has become a key feature in domestic practices. There are lists of Historical and Cultural, Ecological, Eco-Civilisation, Beautiful, and Beautiful Leisure villages, to name a few.

Why such attention to villages in China?

**Anna-Paola Pola**  
Architect and urban planner. Currently, she is Director Urban Planning and Research Fellow at WHITRAP (the World Heritage Institute of Training and Research for the Asia-Pacific Region under the auspices of UNESCO), based at Tongji University in Shanghai. She studies the role of culture for sustainable development of small settlements and marginal areas, with a focus on the Chinese Rural Revitalization process. She collaborates on projects implementing sustainable development and poverty alleviation in remote villages and as a planning consultant in cities.



nation has progressively tackled what has been collectively known as the three rural issues (三农问题): agriculture, villages, and farmers. The “unbalanced and inadequate development” has been set as the new national contradiction to be solved, and a clear goal has been laid out: “We must ensure that by the year 2020, all rural residents living below the current poverty line have been lifted out of poverty.” [3]

### Toward a Socialist, Beautiful, Ecological Rural Environment

In recent years, discourses promoting the enhancement and development of villages and small towns have become a recurrent theme all over the world. Whilst certainly part of a global phenomenon, the experience in China presents unique characteristics.

The focus on small Chinese settlements has complex motivations. On the one hand is a longing for rural economic development and improvement of people’s livelihoods; on the other hand, is a desire to acknowledge and promote Chinese culture, and reverse environmental degradation. All these priorities respond to both national and global strategies.

In the past 40 years of reform and opening-up, the coastal cities accomplished their radical development and modernisation process, expanding the national economy but also raising disparities. At the beginning of the 2000s, discontent due to increasing inequalities between rural and urban areas drew the government’s attention. A critical turning point was 2002, with the leadership change from Jiang Zemin to Hu Jintao. For the first time, at the 16th National Congress of the Chinese Communist Party (CCP), it was declared that the countryside was key to achieving the national goal of a moderately prosperous society (小康社会) and that socio-economic development should incorporate urban and rural areas alike [2]. Since then, the gaze of the

The Chinese development model is closely tied to the urbanisation process, and the law clearly states that “urbanisation is the only way to modernisation” [4]. Thus, the problem of developing rural and marginal areas is an issue of urbanising the countryside (mostly mountainous terrain), and, therefore, the tools proposed to address the imbalance inevitably refer to urban planning criteria. Spatial planning measures have been defined: initially, the approach imposed standard quantitative urban-like models, but in time it has progressively transformed into a more holistic territorial perspective, in which cultural and natural resources contribute to securing a higher quality of development.

At the same time, under the guidance of President Xi Jinping, the role of culture in China has grown at a pace comparable only to its economic development. Culture is deemed crucial in educating the population and gaining international prestige to match the already undisputed financial position of the country. Hence, the official narrative affirms the continuity of a glorious past, emphasising the global relevance of Chinese millenary civilisation.

Indeed, the Chinese countryside has played a crucial role in the history of the country, which has been an agricultural empire for millennia. Incredible remnants of this past still mark the land: rural settlements, agricultural terracing, old postal and commercial routes, and hydraulic works. Villages that have escaped radical ideologies and



ecological civilisation.

### Urban Planning Measures

Planning strategies began operation by rationalising villages and regional layout. Scattered villages merged into larger and more compact settlements through the demolition of hamlets, relocation of villagers, and consolidation of primary farmland. Governmental campaigns called for the rapid provision of essential infrastructure and

modernisation processes conserve a cultural heritage that is a precious resource for the Beautiful China (美丽中国) promoted by national slogans nowadays. This is especially true for remote villages – usually the poorest ones in a market system – that have remained marginal to historical reversals and transformations.

A further piece to complete this complex yet fascinating picture is the environmental concerns embraced by the government. This new matter has already materialised in a coherent corpus of measures including the establishment of the new Ministry of Ecology and Environment, policies for the protection of eco-systems, environment taxes, and massive investments in renewable energies. Since 2012, when the expression Ecological Civilisation (生态文明) was first officially pronounced, it has become increasingly important in the national discourse and is now the main ideological framework of contemporary Chinese environmental policies, as well as “the most significant Chinese state-initiated imaginary of our global future” [5]. Today, the critical role played by villages, small towns, and their vast surrounding areas is acknowledged as a complementary counterpart to growing cities. China is now developing its own methods of rural revitalisation (乡村振兴) through investing in rural economies as providers of quality environmental services and leisure.

All these policies converge on small settlements and marginal areas: rural economic development, cultural soft power, and the horizon of an

public facilities including roads, power grid, telecommunications, sewerage, waste collection, schools, health clinics, post offices, etc. (according to the 2006 strategy Building a New Socialist Countryside, 社会主义新农村建设).

In 2007, the Urban Planning Law became the Urban and Rural Planning Law (城乡规划法), and for the first time, every administrative village was required to formulate a 20-year master plan for redevelopment. Furthermore, an urban-rural integration strategy was put forward, incorporating rural territory into the spatial planning regime [6]. Provinces were asked to define strategic regional plans, outlining the relationships among settlements of different sizes. Small inland cities were planned to become centres for networks of smaller settlements and clusters of villages, providing the services which marginal areas lack.

The Role of the Heritage and the Tourism Lever  
In the span of a few years, the interest in the cultural and natural aspects of villages and rural areas has steadily grown. The heritage narrative, based on contemporary national needs, has been reconceptualised to broaden its scope and fit the priority of poverty eradication [7].

Thus, the Chinese approach to rural heritage remains focused on tourism promotion to meet the need for rapid development. It is no coincidence that in March 2018, the Ministry of Culture and Tourism was established through merging two formerly separate entities, the Ministry of Culture



and China National Tourism Administration. Tourism is considered a means to fight poverty by redistributing private resources from coastal cities to inland regions. A list of Beautiful Leisure Villages (中国美丽休闲乡村) and experimental zones for Rural Tourism, established by the Ministry of Agriculture, pioneered this strategy and recently, at the end of July 2019, the Ministry of Culture and Tourism launched a further group of Key Rural Tourism Villages (全国乡村旅游重点村名单). In remote, rural, and ethnic regions, tourism is introduced as a modernising tool to promote social and cultural development and to better integrate minorities within the nation-state [8]. Large-scale tourism investment companies are invited to act as engines of rural development, but this strategy often results in homologated models of intervention, with little benefits for the inhabitants and potential controversial effects that have generated tensions with local communities in the past.

Beyond tourism, the attention to the countryside and the increasing importance of culture and environment have favoured a shift in the way villages are valued, leading to a substantial leap forward in the heritage discourse. As a result, the rural legacy has been identified in a larger body of elements: heritage is no longer limited to monuments or unique pieces of architecture, instead extending to urban fabrics, landscapes, and complex environmental systems, encompassing spatial arrangements, agricultural practices, social structures, construction technologies, and philosophies of life. All these attributes have been incorporated into official discourses, local policies, and planning mechanisms that are now beginning to be implemented.

Ever-greater numbers of villages are being included in lists for their promotion and enhancement. In 2000, two small settlements in southern Anhui Province, Hongcun and Xidi, were declared World

Heritage Sites [9]. The event was a pivotal moment, as it was the first time that the historical and cultural value of a village in China was recognised at such a level.

In 2003, the first record of Chinese Historic and Cultural Villages (中国历史文化名镇和村) was published, its contents including settlements boasting relevant historical architecture. The list of Traditional Villages (中国传统村落) followed in 2012. This new list expanded the scope of the earlier group by promoting a higher number of settlements, based on the rationale that “although some villages might not have many ancient buildings, they embody, in their layout, in their location, and many intangible aspects, the cultural elements that reflect the essence of Chinese culture” [10]. Protecting the heritage of these villages is declared to be a means for enhancing the awareness and confidence in the value of Chinese culture, promoting the multiplicity and diversity of Chinese cultural expressions (including all officially identified ethnic groups), and leading the economic development of rural areas. Respective of the fact that the country is “a thousand years old farming civilisation, and traditional villages have preserved the cultural roots that stemmed from the countryside” [11], the Traditional Villages list conveys an idea of heritage drawn on this specific interpretation of Chinese ‘farming’ culture, and is finalised to create a vision for the future in continuity with its rural past.

A New Environmental Perspective

Parallel to the focus on culture, the attention to nature is represented by the Ecological Villages (国家级生态村) list created by the Ministry of Ecology and Environment in 2006, and in its updated version the 2014 Eco-Civilisation Villages list (国家生态文明建设示范村). These lists integrate concepts of environmental protection with China’s rural culture to address a new model of urbanisation focused on the nexus between villages, agriculture, and rural landscape. The heritage of farming culture is considered an asset to ensure food security and high-quality products. It has the potential to lead the shift from an economy of subsistence to one based on commercial exchanges while helping the preservation of rural landscapes and ecological environments.

At the same time, the growing number of listed settlements has drawn attention to the specificities of traditional rural settlements, especially in terms of regional and local characteristics and ethnic expressions (as many ethnic minorities reside in remote villages). China is a vast territory with a multitude of landforms and regional climates where diverse cultures have developed a rich range of agricultural patterns and different settlement



models. Consequently, since 2014, national planning tools have incorporated an approach encouraging customised planning interventions that take into account distinctive natural, geographical, historical, and cultural conditions to avoid the homologation of practices (National New Urbanisation Plan 2014–2020).

The lists of model villages were conceived independently from each other and are managed, individually or jointly, by different government departments (e.g. Ministry of Housing and Urban-rural Development, Ministry of Culture, Ministry of Agriculture, Ministry of Ecology and Environment). They also respond to diverse scopes such as infrastructural and agricultural modernisation, heritage preservation, tourism promotion, environmental improvement. Yet, regarded together, they can be considered pieces of a much more comprehensive strategy based on a holistic idea of territory (eco-system), in which cultural, historical, and natural components are mobilised in efforts of rural revitalisation, looking for a way to secure a better quality of life for all—urban and rural—Chinese citizens. ■

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Notes

- [1] [http://www.mohurd.gov.cn/wjfb/201906/t20190620\\_240922.html](http://www.mohurd.gov.cn/wjfb/201906/t20190620_240922.html)
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- [7] Lincoln, Toby, and Rebecca Madgin. 2018. “The Inherent Malleability of Heritage: Creating China’s Beautiful Villages”. *International Journal of Heritage Studies* 24 (1): 1-16.
- [8] Cornet, Candice. 2015. “Tourism Development and Resistance in China”. *Annals of Tourism Research* 52: 29-43.
- [9] <https://whc.unesco.org/en/list/1002>
- [10] The State Council Information Office of the PRC (SCIO). 2013. [The State Council Information Office Held a Press Conference on the Improvement of Rural Living Environment], Beijing (translation by the author).
- [11] Ibid

# The Revitalization of Dongximen Village in Shandong

The village of Dongximen is at the foot of Jiunü Mountain in Tai'an City. It overlooks the neighbouring Shenlong canyon and the nearby mountain peaks, but despite its picturesque surroundings, suffers from the remoteness of its location. Indeed the mountains form a natural barrier against development. Transportation connections are scarce and the land sparse, which has led Dongximen to grow distanced from development and take on the mantle of a provincial-level poor village. The young have left and the old have stayed, exacerbating a hollowing out of the village and its subsequent decline. In the Jiunü mountains, many of the villages can be thus described, but Dongximen is the most remote and the poorest of all. In the context of rural revitalization, residents have put their hopes in architecture to reactivate this hollow village through design.

Ten or so dilapidated stone houses, a few remaining stone walls, and several former pigpens constituted the initial building blocks of the project. When giving new vitality to abandoned structures, the biggest design challenge was how to sustainably bring opportunities to the countryside and how to revitalize rural resources through building something. To this end, line+ architects proposed a parallel design strategy: First, renovation as acupuncture: keeping the boundaries of each homestead the same, activating the space within and treating the environment to an ecological restoration. This would give the village a fresh start by creating a public space and use its mediating attributes to increase village footfall.



**Resource Reorganization, Streamlined Reconstruction**

After an on-site survey, investigation and analysis, the architects continued to work on the texture of the original village, re-planning roads, parking lots and public spaces. At the same time, the stone houses were renovated and upgraded with new functions to take on a new path — the pigpen at the entrance was transformed into a reception center, the houses in the centre made of rough rubble were turned into guest houses, and the best buildings overlooking the Jiunü mountains became a reading room and jacuzzi to support the development of the hotel. Developing facilities ready to welcome guests was critical to the redevelopment.

**A Sea of Mountain Top Clouds Float: Jiunü Mountains Reading Room and Pool**

On the rocky northern mountain face, ethereal white is used in contrast, reflecting the phrase “Heavy as Taishan, light as a cloud», and becoming the key concept of the design. Overlooking the magnificent Tai mountain, the reading room and jacuzzi respond to the waves of Mount Tai in the form of a “floating clouds” hovering in the

mountains and “shells in the sea” of clouds. The hourglass-shaped “floating cloud” room is based on the mountain. The light steel and membrane structure system is strong, reliable and lightweight. The natural curve is a perfect backbone, outlining a thin malleable shape, aided by the transparency of glass. The “shell” pool uses a simplified building method for a pure and smooth appearance. The large cantilevered curved steel keel forms a cloud-like shape that gives space to the scenery beyond.

**The Rebirth of Twelve Homes: A Luxury Hotel in the Hills**

From the beginning, the connection between the rubble house and the site were surveyed, mapped and considered. The remaining stone walls were incorporated, as an important anchor for the new building, and new masonry structures, heat preservation and waterproofing methods were used to improve the new buildings’ thermal performance. The new steel frame was implanted into the old rubble wall, allowing it to adapt to different courtyard layouts including straight, L-shaped and U-shaped. The transformation design uses the simplest industrial materials, flexible



composition principles, and rich traces of the original site to restore twelve “unique yet harmonious” individual courtyards, and then restore their use as dwellings.

**Spatial Renewal: Hotel Reception and Restaurant**

To make the reception area, cafe and restaurant, the architects used different strategies. Using the original pigpens, modern light steel structures were added to bring life back into the space, and large sloped roof allowed light in underneath. The spatial interface aimed to conceal the size of the space and express its fluidity between indoor and outdoor areas. The two residential buildings in the central area have the mountain clearly in sight, and were made into restaurants using the same light steel structure.

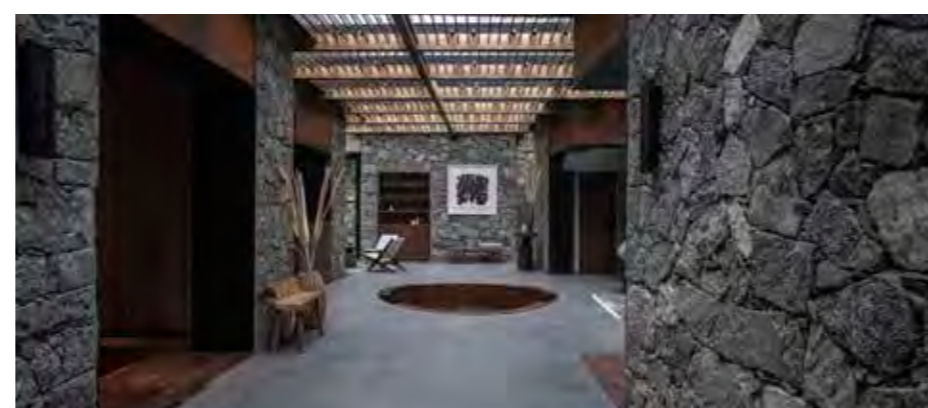
**The Village is Reborn, New Value Created**

In October 2020, the project was opened, and on the strength of widespread dissemination of images of the renovation, the reading room and jacuzzi immediately hit social media as popular local “check-in points.” The 25 guest rooms, 1

restaurant, and 1 reading room now have a monthly turnover of up to 1 million yuan. The spillover effect of the arrival of tourists indirectly benefits village entrepreneurs. From the early planning and programming, the generation of the new space, to business initiations and operations, the project owner and the local village have worked under a joint company to provide local villagers with employment and development opportunities. It goes without saying that after the rubble house was transformed, it increased the assets of the villagers considerably.

State-owned capital can work well with the local government to develop rural revitalization projects. In practice, this spatial design realized cultural inheritance and village revitalization, and it also fulfilled the multiple demands of the project—villagers’ lives have improved and their income has increased, while investors are happy and government’s new rural revitalization model can be considered a success. ■

Please see the [line+ studio website](http://www.lineplus.studio) for more details and images of the project. [www.lineplus.studio](http://www.lineplus.studio)



# The Road to Poverty Alleviation in the Regions: Traditional Culture Redesigned

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In recent years, design has got to work on poverty alleviation, especially among smaller ethnic groups in hard to reach mountainous regions. The process includes heavy emphasis on selecting suitable design strategies for poverty alleviation. In addition to raising income, the core issue for design is how to help poverty-stricken areas develop in a sustainable way using the regional economic resources they have at their disposal.

The design of poverty alleviation projects in ethnic minority areas is all about recreating regional and group cultural elements, which stem from an ecological basis. The design of a poverty alleviation action in Danzhai county in Guizhou province is one such case in point. With the participation of the author, we can see the decisive influence of regional and ethnic culture on its design aspect. The Miao people in Danzhai County are commonly known as the "Bazhai Miao", which refers to the eight or "ba" branches of the group having their own distinct cultural features. They may have lost forms of cultural expression over time, but nevertheless the ancient style of the Miao people continues in the contemporary era. In terms of clothing, Miao batik is considered national intangible cultural heritage. The clothing characteristics of each branch are closely related to their culture. Every pattern, every embroidery method, and every accessory is exquisite. Whether it is the Wotuo pattern of the white-collar Miao in southern Danzhai county ("wotuo" is the Miao language means "batik clothing"), the silver corner decoration of the Chahe branch, or the bright cloth of the gray Ya branch, all are closely related to a way of life built up by the people over thousands of years.

The history of the Bazhai Miao is all about coexistence with nature, as well as the suffering, struggle and longing that has accompanied China's development. Legend has it that the Miao originated from the Jiuli tribe, and were scattered



and displaced due to the defeat of Chi You. Danzhai County is where Miao ancestors migrated to from the Central Plains, so it is full of legends. Miao costumes are not only beautiful, with their embroidery, printing and dyeing, but they also convey a persistence of culture through standardized technique, craft methods and design patterns.

In terms of color, each clan's main color has a cultural symbolism attached to it. Since ancient times, there are five elements, five directions, and five colors. The five elements of gold, wood, water, fire, and earth correspond to the five colors of the five directions—east is green, south is red, west is white, north is black, and middle is yellow. This logic forms a space-time continuum of ethnic colors, with the cultural connotation of color becoming ever more complex and far-reaching. Different nationalities have different applications of color, and their taboos are also different. Therefore design cannot be excessively innovative, and should be based on respect for the local history and culture, and a cultural ecology involving all people.

Ecological development is also a principle that should be followed when formulating and designing poverty alleviation models. Many ethnic groups in our country live in the mountains, and the difficulty reaching these places affects their economic and social relations with the outside world. However, in many cases, it is precisely because of this that they are able to preserve the



Traditional Dongxiang embroidery products (source: Ma Xiaoxiao Embroidery Workshop)

local natural ecology. When facing poverty, appropriate methods should be studied and not at the cost of excessive consumption of local natural ecological resources.

The responsibility of design in poverty alleviation actions is to create life value, on the one hand to participate in a lifestyle, and on the other hand to form consumption links. Design for poverty alleviation should focus on the deconstruction and reshaping of culture. Through innovative design, the elements of culture can create value and help people in poverty-stricken areas generate "fresh blood". This capability should be built on the relationship between people, products, and society, on the basis of natural harmony. The design of poverty alleviation should be oriented to real life in poverty-stricken areas, focusing on how to give local products a spiritual meaning, pay attention to ethics, and guide a reasonable, moderate and sustainable cultural relationship.

The author and team also adopted this design method in the practice of Dongxiang design for poverty alleviation. Dongxiang in Gansu province is the birthplace of the Dongxiang ethnic group and an important part of the southern route of the Ancient Silk Road. The surrounding county has a profound cultural and historical heritage, and many Majiayao cultural relics have been discovered. However, it is located in a remote area and the economic model is mainly agriculture, so it is still the key target of poverty alleviation in my country.

The design team focuses on an important local traditional craft -- Dongxiang embroidery. Embroidery is a traditional technique in this nation and region, and a principal form of craft for the local women. They are rich in historical research and cultural heritage value, and they are the true response of Dongxiang people to their space and environment. Realism is often employed in embroidery, with simple and natural patterns formed, especially in a traditional chopped embroidery technique in which silk threads form continuous lines, with strong three-dimensional graphics and bold colors. In addition to meeting daily needs and reflecting on joyous ways of life beyond farming, embroidery did not generate large-scale economic benefits. As it was based on from generation to generation by women, it was hard to skill up on a large scale.

In the process of participating in poverty alleviation, we came into contact with Ma Xiaoxiao, a millennial poverty alleviation practitioner. Born and raised in Dongxiang Autonomous County, after graduation, she returned to her hometown to start her own business and established an embroidery workshop committed to increasing the income of local residents. But Ma Xiaoxiao's path to poverty alleviation has encountered many setbacks. On the one hand, due to restrictions in the status of women in society and in the family, it is not very realistic to let embroidery workers "reveal their face" to improve their family's living conditions. On the other hand, traditional embroidery patterns, patterns and product may not be understood by the outsiders who buy products.

Using Ma Xiaoxiao's practical experience, the design team realized that the problem it faced was how to break through traditional culture in design poverty alleviation and commercial innovation, form new norms in the system, and innovate in terms of method. Limited by the constraints of geographical space, production methods and lifestyles, the design team decided to cut into regional ethnic culture, deconstruct and re-innovate traditional culture, and find a cultural carrier to help Dongxiang rid itself of poverty, thus forming a relatively complete design transformation path.

## The Cultural Design Path for Dongxiang

Summarizing the experience in Danzhai and Dongxiang counties, we firmly believe that designing poverty alleviation cannot simply consider business innovation, because innovation usually comes at the cost of resource consumption. The essence of design as a starting point for poverty alleviation is to create resources. It is to transform, switch, integrate, develop, create, and dissolve the core elements of ethnic cultures through design, and adjust them to the times. Ultimately this effort will promote the economic and social development of poverty-stricken areas under the cultural ecology of harmonious development. ■

This article is based on the content of an interview in the September 2020 issue of Design magazine, entitled "Redesigning Regional Peoples' Traditional Culture."

# AI Teacher Helps Minority Language Speakers Learn Mandarin

In 2018, Xueersi, a subsidiary of the tutoring platform 100Tal, customized and developed an “AI Smart Teacher” system for Zhaojue county in Sichuan’s Liangshan Yi Autonomous Prefecture which was rolled out in September of that year. This comprised a customized Yi-Chinese bilingual learning module for preschool children. Through in-depth integration of speech recognition and evaluation technologies, the system can carry out intelligent evaluation and correct kids on their pronunciation in real time, thereby helping them learn Mandarin, increasing the update of the national language in the local area.

Zhaojue county is in a deeply impoverished part of Liangshan Yi Autonomous Prefecture in Sichuan. For a long time, the geography meant economic development was held back, and local education had a steep hill to climb. Not speaking Mandarin and lacking high-quality educational resources, the local kids had enormous trouble communicating with the outside world.

The AI-based education system developed by Xueersi is supplemented by immersive animation content. Starting from the bilingual learning needs of children in the Yi ethnic area, it attempts to tackle some of the problems that plague the Yi ethnic area in terms of its development. This is also a first in terms of using AI technology to promote Mandarin in ethnic minority areas.

With a focus on the actual needs of the kids in the county and the needs of pre-school children learning Mandarin (illiterate picture-readers who need Yi-Chinese bilingual assistance), the “AI Teacher” system offers intensive localized vocabulary training. Xueersi, together with the local education bureau and language committee, developed a vocabulary of words held in common by the community, including the names of things, places, animals, plants, Yi foods, clothes and courtesy terms. They invited local teachers from Zhaojue county to draw pictures and record bilingual audio files. The vocabulary was displayed as “picture + Yi-Chinese bilingual pronunciation”, in a concise, easy to understand and fun way, and was suited to the young learners.

The in-depth integration of voice recognition and evaluation and other technologies help the system evaluate and correct children’s pronunciation in real time. The children could learn pinyin, vocabulary, and

grammar in this way. The personalized intelligent feedback offers students results according to different levels of understanding of Mandarin listening and reading, which helps the preschool children pick up and improve their Mandarin in a consistent way.

The system has low environmental requirements for hardware and software, effectively avoiding the constraints of lack of systems, fewer applications, and fewer resources in the process of education informatization in poor areas and counties. In terms of hardware facilities, the system is an offline application that only needs an electronic screen to launch. In the context of the implementation of the “One Village, One Child” and the “One Township, One Garden” projects in Liangshan prefecture, all preschool teaching sites in Zhaojue county have sufficient hardware. As for software, the “AI Teacher” guides progress, and the preschool education advisor plays an auxiliary role, so the requirement for teaching professionals is low. Even teachers who don’t speak good Mandarin themselves can assist in their students’ online study of the language.

The “AI Teacher” Mandarin teaching system has already benefited nearly 80,000 students and more than 2,000 preschool and elementary school teachers. It has effectively improved the Mandarin level of local preschool children, alleviated the issue of insufficient numbers of teachers, and helped women and children tackle poverty and regional sustainability. Development and other aspects have played a significant role, laying the foundation for children in minority areas to enjoy fair education and shed poverty.

The “AI Smart Teacher” project has accompanied the Daliang mountainous region in the improvement of its socio-economic outlook. Numerous poor people have gained sustainable employment opportunities and seen their family income levels rise.

The project is itself highly reproducible. The system can provide rich and replenishable free resources for all teaching sites. Upgrades are simple and fast, highlighting the value of sustainable development.

In April 2020, UNESCO awarded the 100Tal Education and Technology Group a certificate of “Artificial Intelligence and Inclusiveness” as part of the 2020 Mobile Learning Week, in recognition of the group’s use of AI and big data to improve literacy and protection of (minority) language and increased inclusiveness. ■

[www.100tal.com](http://www.100tal.com)



# Multicultural Sustainability in Urban IP

**Guo Yicheng**, Professor, School of Arts Administration and Education, Central Academy of Fine Arts (CAFA)

The multicultural nature of the city has become a series of symbols in the course of the development of urban tourism, forming a city’s unique IP. Urban IP aims to promote unique landmarks, regional resources and cultural values in the process of urban innovation and development, as cities reach towards a sustainable cultural and economic future in coexistence with cultural diversity.

## URBAN IP CASE STUDY: BERLIN

### Berlin’s East Side Gallery

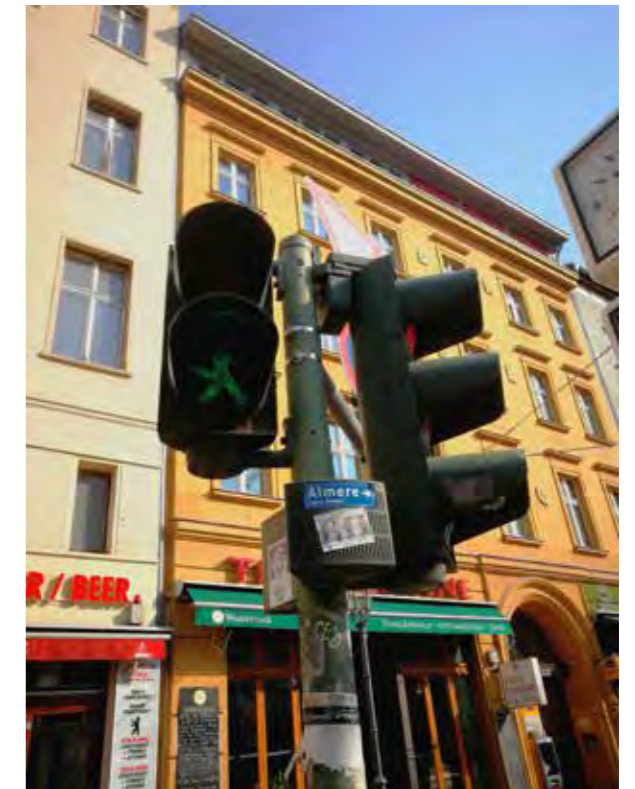
When people think of Berlin, the capital of Germany, their minds turn immediately to the Berlin Wall that divided Germany from 1961 to 1989. On September 28, 1990, the world’s biggest open-air gallery opened along the wall. The East Side Gallery welcomed a total of 180 artists from 21 countries who each painted parts of the 1.3 km wall. The following year, this section of the Berlin Wall was given protected status, becoming a public art work that highlighted an important aspect of Berlin’s urban culture, and in turn becoming an important landmark of urban IP.

One of the most distinctive parts of Berlin’s urban IP is its old traffic light system. After the reunification, Markus Heckhausen acquired brand ownership of the design used for traffic lights in Eastern Germany and made a series of designs based on it. Berlin’s traffic light figures are now

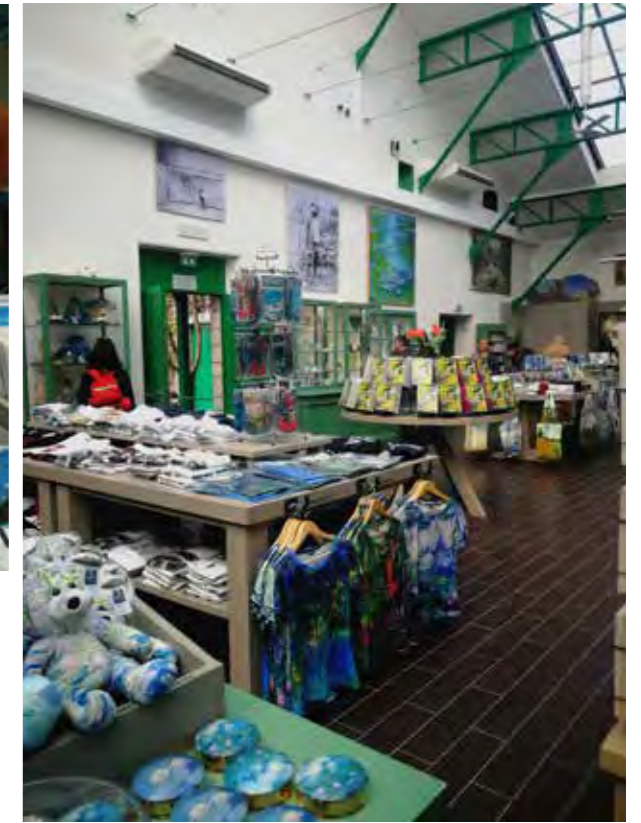
found in souvenir shops across Berlin. Not only are there refrigerator magnets, coasters, key rings, bottle openers, thermoses, umbrellas, and stationery, but you can also find clothes, backpacks, bags, accessories, and bookshelves for sale.

Today, these traffic light characters have become famous cultural symbols of the city. When traffic lights can be considered IP, commercial benefits and influence flows towards designers and their cities. It can be seen that the value of urban IP is not only to drive tourism, but more importantly, to authorize art planning. A sound historical and cultural story helps with the sustainable and innovative development of a city’s multiculturalism.

Traffic light signs on the street and in the stores of Berlin







## URBAN IP CASE STUDY: PARIS

### Monet's Garden and authorized sales centre in the suburbs of Paris

When it comes to regional sustainable development driven by an artist's IP, Monet's Garden in Giverny, Paris is a classic case. Monet's Garden is in the former residence of the famous French painter, and home to his collection and various possessions.

The garden, Monet's own, was the source of his later artistic inspiration, which brought the colours of this particular garden to an audience across the world. Through the authorization of sales of derivatives of Monet's art, the famous artist's IP appeared. From sales of products globally, more people got to know Monet and Impressionism, and

this French town was able to embark on a sustainable development path by way of its cultural and creative industries. Current Status and Paths to IP Localization in Chinese Cities

Chinese urban IP is still in its infancy, and cities such as Beijing, Shanghai, Guangzhou and Shenzhen have all made attempts. Although these have not yet reached a state of maturity, they each have their own characteristics.

After the 2008 Olympic Games, the Beijing Municipal Government launched "Beijing Gifts", a government-registered brand for tourism products. The IP logo was created in 2011. Since then, it has gradually introduced derivative products of time-honored brands such as the liquor Red Star Erguotou, Quanjude Roast Duck, Wang Mazi Scissors, an inkstone set in the shape of Olympic venues such as the Bird's Nest and the Water Cube, and porcelain replicas of Beijing's famous parks.

However, "Beijing Gifts" lacks an overall IP authorization plan, limiting its design, trademarking, display and other aspects, and diminishing its brand impact in overall terms.

Chinese urban IP development still has supply side issues. To overcome these, it will have to shift from extensive management to intensive sustainable development, and start telling better stories, planning good projects, and having a diversified well-managed supply of products.

To realize the diversified and sustainable development of urban culture and its planning and promotion, the key is to beautify the cultural genes of urban life. I once elaborated on an "Urban IP Concentric Circles" system: Taking "Better Life, Beautiful City" as the core of urban IP, creating urban IP through art forms including digital art, festivals, exhibitions, public design, animation, and short videos. Such a content system, through the development of cultural products at government

and industry levels, forms an urban IP authorization system, and eventually an immersive experience of the "urban art gallery", in an "urban IP concentric circle" system.

The urban IP concentric circle is contemporary art with beauty as its core, a cultural product formed by it, and a lifestyle shaped by it. The first level of integration is the relationship between beauty, life and contemporary art. The second link is the formation of IP, that is, the integration of intellectual property in various industrial sectors. The third link is the "urban art gallery" formed after integration as a representative lifestyle. The urban IP concentric circle system specifically interprets how to achieve the sustainable development path of the urban cultural tourism industry by creating a cultural IP with "beauty" at its core. This is a way for Chinese cities to get out of their "a thousand cities are all the same" predicament and achieve UN-guided multiculturalism. ■

# New Business Forms, New Business Models and New Industries

By **Zhang Xiaoming** Vice Director of China National Center for Culture Studies of Chinese Academy of Social Sciences (CASS), Member of ICCSD Advisory Committee

In recent years, the “three-new policy”, namely “new industries, new business forms, and new business models” has become the buzzword. Now it has also been applied to the digital culture industries, and the deeper connotations are waiting to be further explored.

## The “three-new policy” as an important measure under the theme “high-quality development”

In 2017, the 19th Session of the CPC National Congress put forward the concept of “high-quality development” for the first time, showing that China’s economy was witnessing the change from rapid growth to high-quality development. High-quality development fundamentally means the vitality, creativity and competitiveness of economic growth, which are fully represented by the “three-new policy”.

“New industries” means adopting new research results and emerging technologies to develop new forms of economic activities at a certain scale. They may be directly driven by the industrial application of new technologies, or evolve from traditional industries adopting modern information technologies. “New business forms” mean that new links, new chains and new activity forms are added to the existent industries and fields with the help of technological innovation and application after the diverse and personalized needs are met in the process of providing products or services. Specifically, they are represented by operation activities based on the Internet. “New business model” refers to the integration and reorganization of various internal and external elements of enterprise

operations in order to achieve the goal of user value and sustainable profit, and form a highly efficient and competitive business operation mode, since they integrate the Internet with industrial innovation, and hardware with services, and meet the needs for consumption, entertainment, leisure and services in various scenarios.

The “three-new policy” in the field of culture has a progressive logical relationship, which reveals the logical order for the high-quality development of the digital culture industry. The first is “New business form”, meaning the new activity emerging due to new demands. Then there is “New business models”, when the new activity form fully integrates the elements at the level of enterprise organization and solidifies into a unique competitive business closed loop. Finally, “New industries”, the last to be taken into consideration, can be interpreted as a cluster of companies with the same features of new business models and unique industrial features. Thus, they are recognized as the new frontiers in the development of digital culture industries.

The logic of the “three-new policy” offers specific methods for studying high-quality development of digital culture industries.

First of all, “new cultural business forms” are not part of the traditional “consumption business forms” but a richer array covering the whole industrial chain. Hence, they could serve as the starting point for studying the high-quality development.

Secondly, the evolution from new cultural business forms into new business models requires the great improvement in business operation, soundness, continuous profit making

and copiable models. In most cases, new business forms are unstable and experimental, thus appearing in one spiral and vanishing in another. New business forms boast great vitality, creativity and meaningful exploration, but they may also bring unpredictable risks. To some extent, the evolution means a “dangerous jump” for businesses.

Thirdly, the evolution from “new business models” into “new industries” symbolizes the successful copying of business operation models, the clustering of the same type of companies and reaching specific industrial categories.

## Problems requiring further study

Can “new business forms” be “supported” by policy intervention? A highly open, competitive and inclusive market should be the foundation for the development of cultural and creative industries. How can we support the market when it is not yet perfect?

The early stage of large-scale commercialization of new technologies is also an opportunity period for industrial upgrading. In order to seize the opportunity, policy intervention may also be necessary. Therefore the question is what kind of policy is needed rather than whether to introduce policies.

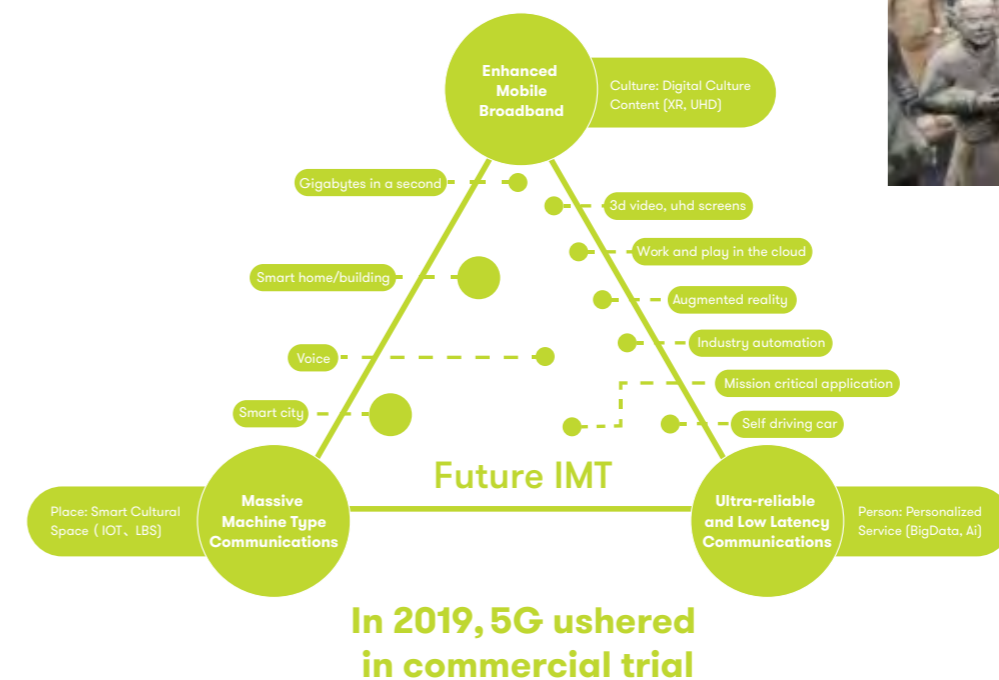
In order to better guide the emerging industries, it is necessary to strengthen the trend prediction research and support the implementation of policies by scientific prediction.

In recent years, great changes have taken place in the development of digital culture industry. Many new phenomena are completely new to us and are all brand new problems. Therefore, we need to pay attention to the research in this field, focusing on the necessary changes of some traditional models and concepts against the new background. ■

*This article is based on the speech given by Mr Zhang Xiaoming at the CREATIVITY 2030 SEMINAR, held on April 29th by the International Center for Creativity and Sustainable Development under the auspices of UNESCO.*

# Digital Technology Can Promote Cross Regional Cultural Exchange and Trade

By **Chen Hong**  
Professor of Beijing University of Posts and Telecommunications;  
Chief Expert of Recommendation T.621 of ITU



The environment we live in and our cultural background vary to a great extent, thus it is difficult for us to get a deep understanding of local cultural heritage when we pay a visit to a cultural heritage site across regions. This has, to a certain degree, reduced the number of trade activities about cultural products, hence impeding the development of cultural and creative industries in terms of limiting the scale and value improvement of the industries. This is a major challenge we are facing now.

Cultural heritage is the core carrier of global cultural diversity. Most of them remain in their places of origin, and it proves hard to be transferred across regions. There may be a few cross-regional exhibitions, but the public deserves and requires better chances for exchange. Such exhibits are inadequate in number since the transfer of objects is too often slower than digital promotion. Thus, in a sense, the organising efficiency is relatively low. Another challenge

facing us is how to provide more chances for exchanges and in turn, offer more opportunities and open up more possibilities for the development of cultural and creative industries.

In 2012, big data became familiar to the global industrialists. As a new method, it has been accepted by almost all industries and improved our

capacity for analysis and use of data. Then the concept “data are assets” was brought up. 2016 witnessed the application of AI to industrial activities on a grand scale. In 2019, a landmark event was the global business adoption of 5G. These are all representative examples of digital technology. The concept of Internet of Things (IoT) appeared at an earlier time, but the technology did not come into full use until business thoroughly adopted 5G since the utilization of IoT requires an extremely powerful Internet connection. We may be able to connect some electronic devices with the Internet, but such a connection pales in comparison with the connectivity of all the things that we have imagined. Such imagination has turned into a reality with the help of 5G. In just five or six years, digital technology has rapidly witnessed widespread application, providing favorable opportunities and methods for us to solve the problems related to the development of culture, creativity and industry.



**CASE STUDY #1:**

**Cultural Cube—Community Cultural Spaces**

Since the outbreak of Covid-19, strict limits have been set on long-distance tourism. Cultural tourism and cultural expos have been significantly affected. Brilliant cultural heritage cannot continue to serve the public, so we have assumed whether digital technology like 5G, VR and HoLo could, by digitalized and long-distance transmission, bring cultural heritage to communities, closer to the folks.

This is an experimental project employing a large number of intelligent terminals. We can set those terminals offline and formulate digitalized standards for cultural assets and heritage. After the uniform standards are digitalized, we will transmit them to remote terminals. Then the spaces connected by the terminals will widely promote cultural heritage in communities amidst the pandemic and perform their due functions of promotion and inheritance.



**CASE STUDY #2:**

**AR Museums**

In addition to Virtual Reality (VR), Augmented Reality (AR) is another great example of digital technology. AR could be fully applied to some offline scenarios. They could be adopted by museums and better serve such cultural venues in real life. Museums boast a variety of cultural resources, and the full presentation of stories about cultural relics and artworks relies on appropriate methods. We have cooperated with China Mobile to hold a grand mural exhibition covering plenty of cultural relics and artworks, telling their stories to the public with the help of digital technology. We

provide better services offline by using specific equipment and software as well as creative digital content. Such methods will more effectively draw the public to cultural venues and enable them to get a better understanding of relevant culture.

Besides, we have held an exhibition in China centered on the Mayan Culture. Since the cultural exchange was conducted across the Pacific, the public naturally found it hard to get a deep understanding. Then we adopted relevant equipment and AR to provide a real-time presentation of the Mayan Culture, and such methods have helped the visitors learn more about the ancient civilization. This example has fully shown how digital technology advances cultural and creative industries.



**CASE STUDY #3:**

**“Serious Tourism Game”**

Dunhuang Mogao Grottoes is a well-known cultural relic site in China with an impressive view of deserts. We tried creating an online game that was able to reproduce the image of Mogao Grottoes, a world-class cultural asset. In this way, we could stimulate great interest in destinations before the travelers set out, and then more were likely to pay a visit offline. Different from traditional Internet games, this game showed strong purposiveness and particularly led the players to pay a real-life visit since some functions could be performed online while others required traveling to specific destinations. It was called the “Serious Game” and helped enhance tourism growth. The pandemic is sure to end sometime, and a major real-world problem facing us afterwards is how to promote tourism recovery. In this case, digital Internet games which attract a great number of users may provide a good solution.

Overall, we will, based on digital technology, adopt creative methods, especially methods enabling interactive experiences, to promote creative products and culture transmission. ■

*This article is based on the speech given by Mr Chen Hong at the CREATIVITY 2030 SEMINAR, held on April 29th by the International Center for Creativity and Sustainable Development under the auspices of UNESCO.*

# Talking Straight to the Kids

2020 was a year of ups and downs for many people. Too much uncertainty makes people confused and anxious. For young people taking their first steps beyond school, the future must feel impossible to predict. In January 2021, youth36kr, a youth segment of the Chinese tech-focused blog 36Kr, invited investors, business owners, entrepreneurs, and economists to respond to ten questions taken from the comments of over a thousand young readers. In doing so, they attempted to solve their dilemmas from multiple perspectives.



*If we could click to refresh 2020, what advice would you give young people?*

**He Fan:** First buy masks, then buy shares.

**James Liang:** Drop your old ways of thinking and try more new things.

*Many leading companies in China only recruit graduates from the top schools (funded by “985” or “211” national grants). How should an undergraduate at a regular college prepare for this?*

**Kaifu Lee:** The fact that you’re studying at a regular college is clear from the moment you enter the school. Over four years of study, there are plenty of opportunities to change. You need to be able to make a plan, persevere with it and actually carry out your plan. Improve your competitiveness in a variety of ways; take a second specialization

to develop on your professional skills and explore your own interests. If you find a major that meets your interests and hobbies and has a good career prospect, you might even apply to switch majors.

**He Fan:** We must learn to distinguish real from fictitious, build on our strengths and avoid weaknesses. Going head-to-head with students from prestigious schools is not the best idea. But going where they are unwilling to go may exercise your talents better so that you grow faster. If you keep doing things they are not willing to do, eventually you will be doing things that they cannot do.

**Zhang Ying:** Sometimes you aren’t necessarily given the best in life, but in the long run it may still be for the better. The world is vast and there are opportunities you don’t know about yet. First find the direction you are interested in. It may seem marginal, but as you gain skills over time you will find yourself able to make something of it yourself.



**James Liang**  
Co-founder and Chairman  
of Ctrip Group



**Zhang Ying**  
Founding Managing Partner  
of Matrix Partners China



**Tao Peng**  
President of Airbnb China



**He Fan**  
Economist



**Kaifu Lee**  
Chairman and CEO  
of Innovation Works



**Wu Sheng**  
Founder of Context Lab

*The pandemic has strengthened the idea that working within the system is the best way forward. Is it worth changing career direction to fit the new reality?*

**He Fan:** Career planning gets old quickly, and there is no need to use your career to dampen your life. If you only rely on the system to provide a stable job, your job may threaten to topple at some point.

*Regarding career, is it best to stay the course, or keep exploring until you make a breakthrough?*

**Wu Sheng:** Career focus on a single path is something that has been transferred from other disciplines. Competition today is increasingly systemic, permitting interdisciplinary thinking, and even making it a necessary strategy for survival. Workplace sustainability today not only means exploring diverse possibilities, but also developing multiple interests so you can take advantage of your core competitiveness and advantages at any time.

*2020 has spawned a multitude of sideline businesses. Without any special skills, should we develop sideline businesses?*

**Zhang Ying:** If you don't have a general skillset, you won't be able to create a high-return sideline

business. The most important thing has to be cultivating skills in your own professional field.

**Kaifu Lee:** Sideline projects need a careful evaluation of whether they are in line with hobbies and specializations. You also really need to calculate the input-output ratio. Your side business must at least fit with a hobby or a specialization, and it is best to have both. If neither, then best not do it.

The calculation of the input-output ratio requires careful evaluation: first, where the industry is going in your main place of business. Secondly, what's the ceiling of the job. If the developmental trend is good and the ceiling high, do your main business first. But if your job is in a dwindling industry, or involves repetitive and simple tasks, you should consider working on a sideline project, making a breakthrough or switch career track.

An important reminder: The era of artificial intelligence has already begun, so you must carefully consider whether your main or sideline business is likely to be replaced by AI within five years to ensure that you are on the right track!

*What's the best way to deal with information overload?*

**Tao Peng:** We must take the initiative and consciously screen for effective and valuable information for our own use. Use reverse thinking to look at the information or opinions in the news, which will help filter out redundant information more effectively. Second, think independently. You need to think from multiple angles and make

repeated comparisons and verifications from different angles to get as close as you can to the truth.

**Wu Sheng:** If you know what you want, you can better judge what is important in information processing. In terms of time allocation, it is necessary to have a real self-discipline mechanism in order to maintain freedom and efficiency in an era of explosive information.

**He Fan:** Read more books and scroll less on the phone.

*What kinds of opportunities will the 5G era bring to ordinary people?*

**Kaifu Lee:** In the 5G era, we must actively embrace technological progress brought about by the new AI economy and let it spread widely and immediately. My solution has three parts: Relearn, Recalibrate, and Renaissance.

**Relearn:** Employers need to retrain people who are unemployed due to replacement by AI. The government and related units need to plan a large amount of funds in advance to support this transitional period. Schools need to review the curriculum system as soon as possible to cultivate creative and social skills. Future talents will need to enhance cross-disciplinary knowledge.

**Recalibrate:** Combining human nature with the technological advantages of AI is good for optimization, as many jobs and occupations will be reshaped, and emerging forms of work will follow.

**Renaissance:** The new economic era of AI will rewrite the inherent model of workplace planning

and will also promote a new set of social contracts. AI can release people from repetitive tasks, so that we can focus our abilities on invention, discovery, creation, and creativity. Everyone has the opportunity to re-discover their true potential in the AI era by a process of renaissance.

**He Fan:** When the revolution in electricity came, most ordinary people didn't get any chance to make a fortune, but they got electric lights, TVs, ovens, air conditioners, refrigerators, and elevators. The same is true in the 5G era.

**Wu Sheng:** For ordinary people, 5G's more important opportunities are manifested in the freedom of creation and better "publishing ability". This may mean becoming a vlogger, or it may be based on 5G application scenarios to realize the opportunity of "IP remaking" on brand-new publishing platforms.

*What kind of life should be considered successful?*

**Kaifu Lee:** True success should be diversified. Success is not about comparing yourself with others, but about understanding yourself, discovering your own goals and interests, striving to better yourself day by day.

**Zhang Ying:** Making money, turning it into more, doing more meaningful things, and spending that money meaningfully. ■

# Visualize Me

文化视觉

# How to Pass Time in the Countryside

Zhang Xiaowu

Township teacher, independent photographer



Wandering around the towns and villages of China always gives me a good feeling. In the drama of regular rituals being played out, my camera seeks everyday happiness in local forms of entertainment.

In the desire to consume, in simple rural contexts, village entertainment is a mixed bag of delights, in which everyone can find something to suit their taste.

In my hometown (Wenzhou, Zhejiang), I disassembled and reconstructed rural entertainment culture. "Village Entertainment" is a series of photographs that aims to respect the visual truth, represent rural entertainment in its original state with all the details, recognize balance, and the ways in which fun and entertainment are diluted, and give a three-dimensional impression of life there. The text focuses on the complex relationship between people, entertainment, and the environment in entertainment. In this representation of entertainment in context, the influence, function, transformation and extent of cultural presentation are delved into.

The countryside may appear alienated, but no matter how crude the entertainment is, happiness always peeks through, even when the fun being had is absurd and exaggerated.

In my own way, I hope to preserve this sense of delight, presenting it quietly and constantly superimposing other elements onto it, until the short-term excitement fades, the packaging of happiness disappears, and what remains of the illusion is just the village itself.



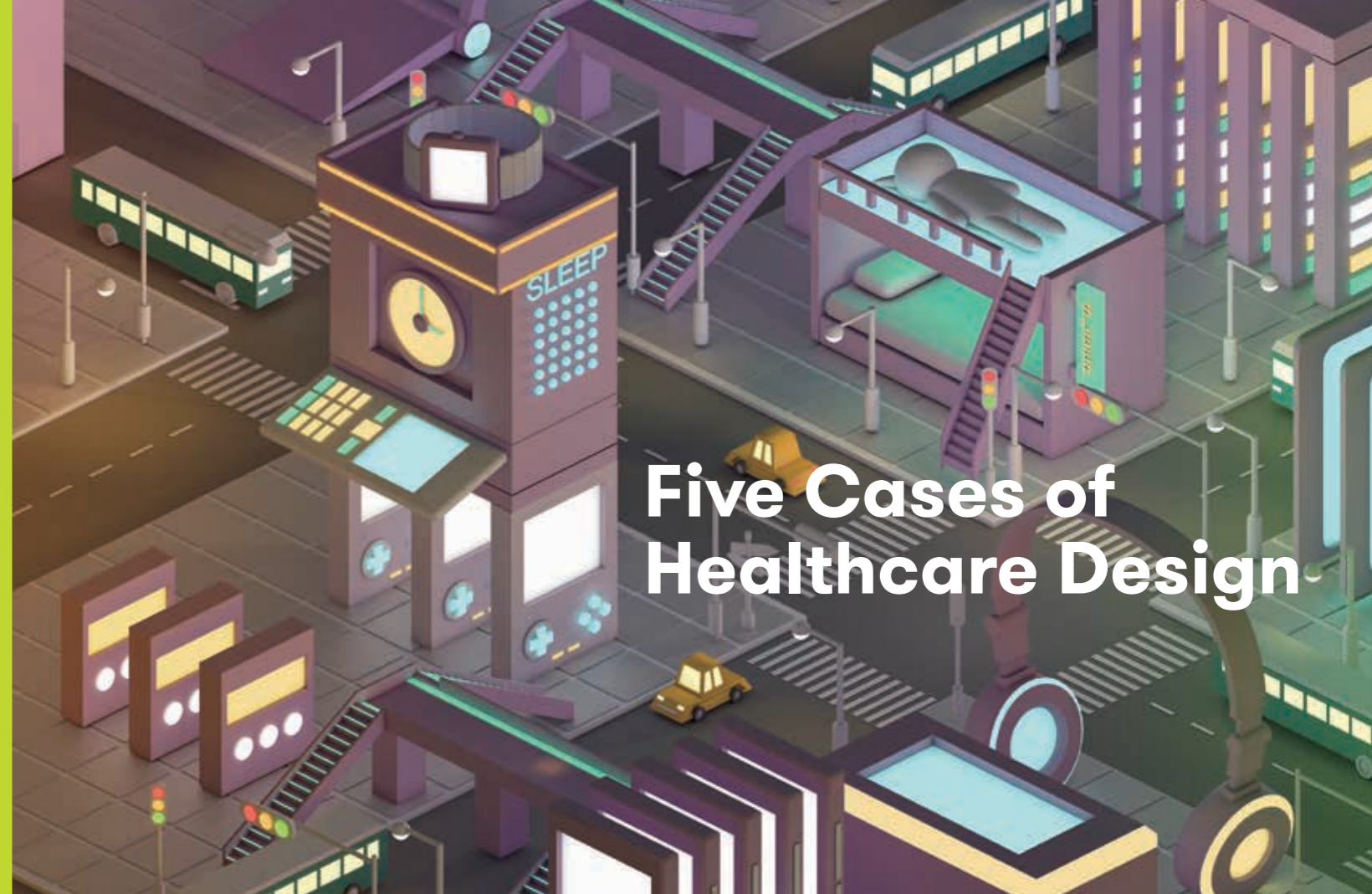


We especially thank MODU MAGAZINE / MODUMAG.COM / 陌都 for letting us discover Zhang Xiaowu and his "Village Entertainment" series, and for helping in facilitating our connection to the author.



# Serial Innovators

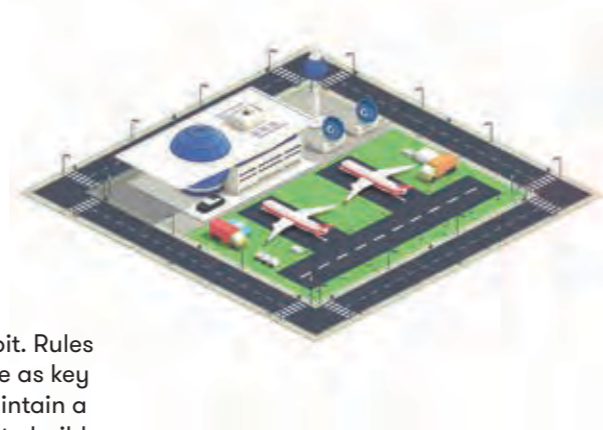
对话创新者



## Five Cases of Healthcare Design

The Covid-19 pandemic that began last year, has brought healthcare issues at the center of everyone's attention, around the world. Countries, governments and institutions have tilted the goal of national well-being towards medical research and development, medical system construction, policies and services related to major disasters' disease emergency measures and other directions. Individuals not only pay more attention to physical conditions, disease prevention means, travel safety measures, etc., but also realize that personal health problems are not just limited to the treatment and prevention of physical diseases. In response to the current epidemic, everyone began to think about how access improved and more comprehensive healthcare design and services for their daily lives.

In order to help promote interdisciplinary research and practice results in the design field and the healthcare industry, three domestic university professors - Ding Zhaochen, Wu Lixing and Yang Yifan have jointly edited the book 'Lighting Healthcare Design' 100 International Creative Case-Studies' (Southwest Jiaotong University Press, to be published soon). The book collects and analyzes outstanding healthcare design case-studies from China and International and comprehensively introduces relevant organizations, enterprises, designers and other resources. The work covers the design of healthcare and medical products and equipment, traditional graphic design, healthcare management application design, architectural environment design, etc. Among them, we have selected five cases to share with our readers.



## Sleep City

**Cao Mingyang, Ma Guanzheng**  
(Beijing Institute of Fashion Technology)/2017

This is a game that tries to help users develop a good sleeping habit. Rules of the Game: by keeping the going to bed time and waking up time as key indicators, users who succeed in applying such indicators and maintain a good sleeping habit can win credits. The credits can then be used to build a city, where the quality of urban construction directly reflects the pros and cons of working and resting habits of the users. Following a development cycle of habit cognition, the game sets a sleep schedule on a 21-day cycle.

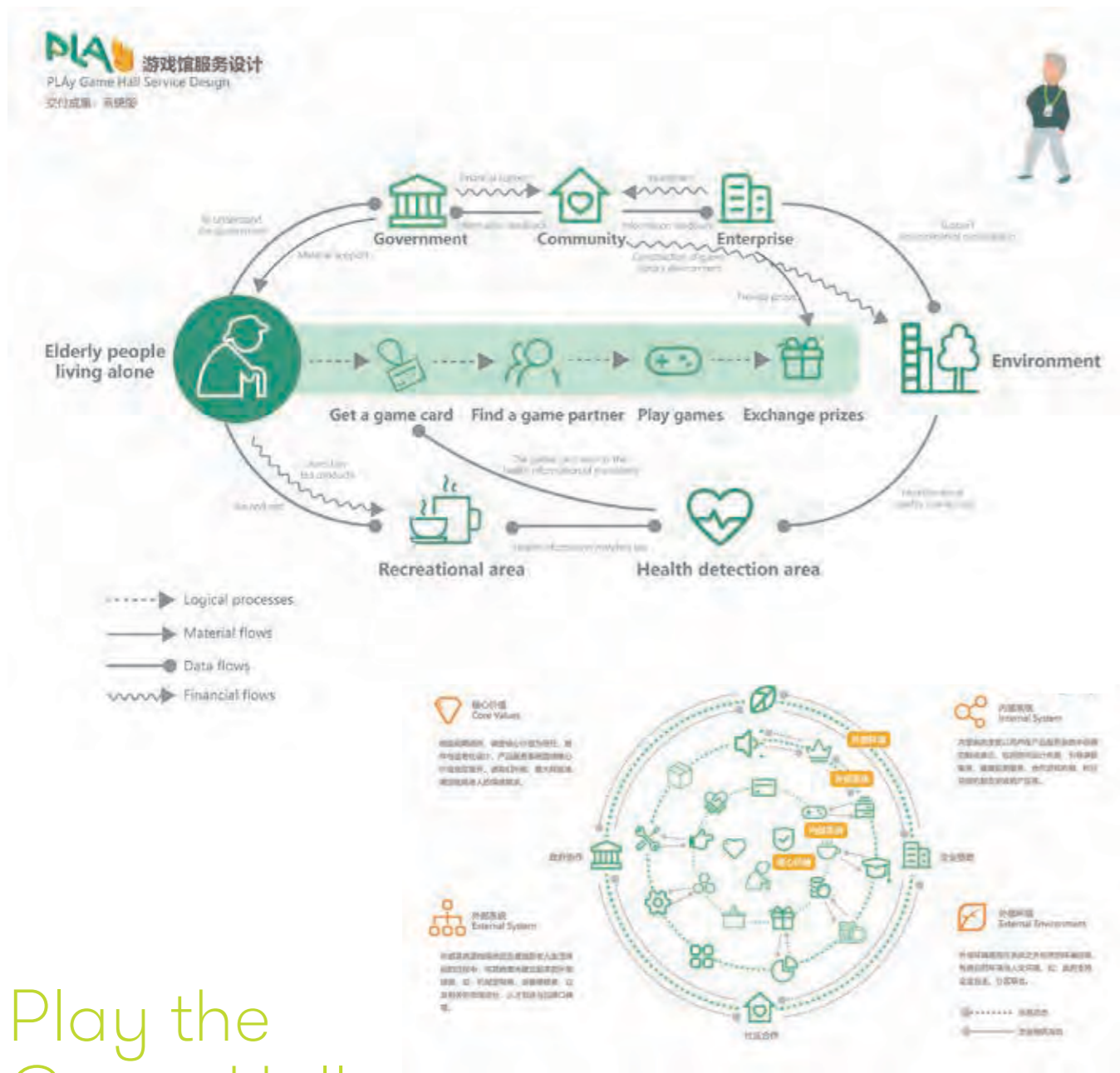
Sleep is turned into a rewarding task and the graphic and game mode is also in line with the psychology of users, which may indeed effectively help users to go to bed on time voluntarily and autonomously.



## Medmodular

**Eir Healthcare/2019**

This is a modular ward introduced specifically for the internal space of the hospital, which can be built according to different use requirements. With the help of a modular design, any location can be transformed into a plug-and-play medical space. The modular single space is produced in batches by the factory in advance and flexibly arranged as needed. The ward can either exist on its own or in a hybrid configuration with the existing hospital space. In addition, the space is equipped with contactless equipment, such as hands-free door handles and faucets, to reduce the patients' contact with bacteria. The interior wall is equipped with a large screen display to allow medical staff to understand patients' physical status more clearly.



# Play the Game Hall

Gao Yunshuai, Wang Xuejun, Bai Lingao (School of Digital Media and Design Art, Beijing University of Posts and Telecommunications) / 2019

This is a service system design for a community entertainment center which mainly focuses on elderly people. It is designed to meet the entertainment and spiritual needs of the elderly people who live alone, and is expected to provide them with companionship, trust and other emotional compensations in order to alleviate their psychological loneliness. Play the Game Hall is planned to be divided into five major areas, including Public Game Area, Health Monitoring Area, Private Game Area, Leisure Area and Exchange Area. The design team has redesigned the service system of the entertainment center, in order to provide facilities and elderly care service design for those elderly people living along. This design work includes the following principles: Create a new expression; Simplify the game operation process; Reduce the memory load for the elderly; Optimize the service relationship among people, things and environment.



# Surgibox

SurgiBox&MIT D-Lab/2019

This is a mobile surgical hood dedicated to address the problem of performing operations in a humble medical environment. There are many poor areas in the world that don't have enough resources to ensure a non-polluting surgical environment. The product is designed to help surgeons in these areas deal with medical infections that may be caused by dust, bacteria or other contaminants during surgery. The design adopts the concept of "wrapping" to ensure the safety of the space area where doctors perform operations.

This design not only redefines the concept of "safe operations," but also provides a simple and inexpensive solution for the implementation of surgery in poor areas. It has lighting and other practical functions to ensure the visibility of the operating environment. In addition, the lightweight and convenient design also make it convenient for medical staff to carry it outside.

# Breath of Life

McCann Health  
Shanghai/2019

This is a chronic obstructive pulmonary disease self-examination APP that users can utilize on WeChat. With design integrating digital media technology and traditional art, it can help people understand their lung problems and keep their lungs healthy. Inspired by Chinese blowing paintings, the phone screen was designed to grow trees and flowers by blowing air towards the phone. Users need to select a tree form that they like and then exhale forcefully onto the phone and an artistic tree will grow out on the screen. A microphone on the phone records the sound of breathing of the user in real time and quantifies it into a sound wave.

The APP design team used algorithms to transform sound waves and vital capacity into the shape of a tree. If the number of vital capacity on the phone is less than 70 percent that of a normal person, the APP will suggest that the user go to the hospital for a check-up. In addition, users can share their own tree images and invite friends to join the test.

As shown in the survey, about 100 million people in China suffer from chronic obstructive pulmonary disease (COPD). But the shortness of breath caused by the disease is often considered a common symptom in older people, leading to a significant reduction in the number of patients receiving treatment for COPD. The APP design won the first Pharmaceutical Lion Grand Prix at the 2019 Cannes Lions International Festival of Creativity.



# On Kunming's "Biological Civilization" Train

In response to the 15th Conference of the United Nations Convention on Biological Diversity (hereinafter referred to as COP15) to be held in Kunming in October this year, Kunming opened its fourth subway line, with a daily capacity of 100,000 passengers. The city has dubbed Line 4 its "eco-civilization train" and requested design students to make posters on the theme, "Cloud • Flower Murmur." But these are no ordinary posters. They are AI digital interactive posters. Moreover, the gold award winner of the Digital Interactive Art Competition of Chinese Universities, designed by teachers and students from school of Art and Design, Yunnan University, has been integrated into the metro design to accentuate positive environmental features in time for COP15, to be hosted in the city later in 2021. Through interactive publicity in major transportation hubs, public awareness of Yunnan's biodiversity and the need to protect the ecological environment can be heightened.

The special geographical position of Yunnan Province makes it one of the regions with the richest biodiversity in the world and an eco-shield of Southwest China, known as the "kingdom of animals and plants." The Gaoligong mountains in Yunnan contain a complete natural bioclimatic vertical band spectrum, with rare plants and diverse vegetation, ranking the area at the forefront of China's nature zones.

Tourism, hydropower plants and cement factories near the Gaoligong Mountain Conservation Area have seriously damaged the biological resources of the area in recent years. Timely and effective protection measures have become ever more crucial.

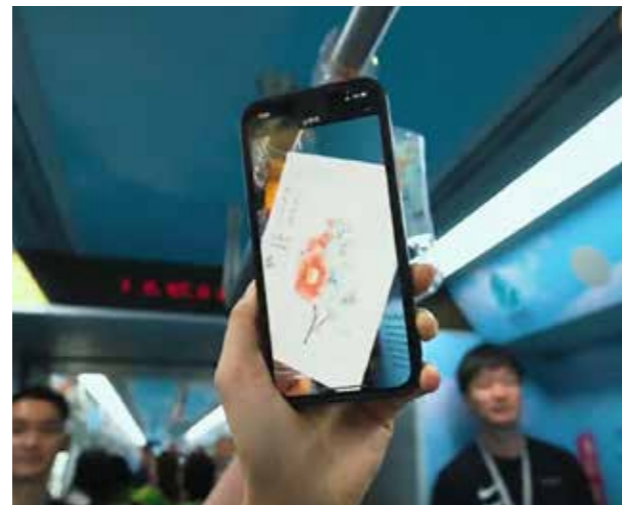
The dynamic AR "Cloud • Flower Murmur" poster explores the significance of biodiversity based on the eight famous flowers of the Gaoligong mountains. Eight endangered plants have been selected, namely camellia, magnolia, lily, rhododendron, primula, orchid, meconopsis and gentian. These gorgeous flowers are extremely rare, and the designer hopes to illustrate the beauty of biodiversity through these innovative posters in case you don't have the chance to see them for real.

To see the poster, passengers scan a QR code on the train. Augmented reality offers dynamic interaction between the scanner and the poster, with viewers' experiential senses enhanced through the virtual

interaction. This is an unforgettable way to celebrate Yunnan's biodiversity.

The AR posters on the "eco-civilization train" position the ecology directly inside your commute, stimulating public participation in the development and protection of our shared ecological civilization.

COP15 will be held in Kunming this year on October 11-24, themed "Ecological Civilization: Jointly Building a Community of Life on Earth." The conference will review the post-2020 global biodiversity framework and set new global biodiversity goals for 2030. ■



# Creative Senses

## 创意资讯

## How the Digital Economy Advances Creative Industries

On April 29th CREATIVITY 2030 SEMINAR “How the Digital Economy Advances Creative Industries” was held in Beijing, hosted by International Center for Creativity and Sustainable Development under the auspices of UNESCO (ICCSA). The seminar was accessible both online and offline. The purpose of the seminar was to analyse how digital technology promotes cultural and creative industries during and after the pandemic, explore the role of new digital cultural industries in the future social activities, economic production and cultural exchanges, as well as discover the opportunities and trends for the growth of such industries in the context of the digital economy.

With the development of digital technology, cultural creation and production have shifted from real life events, offline so to speak, to online events, resulting in new forms of cultural presentations and consumption. While this trend has been in the works since several years, the pandemic has accelerated it. Exhibitions, auctions, music performances, theatre presentations, dance, tourism, cultural heritage, conferences and many more creative exchanges have all migrated to the digital cloud world, allowing instantaneous access, global sharing and education.

This development trend reflects the relevance and interdependency between cultural industry and digital economy.

In the post-pandemic era, digital technologies may progressively help to upgrade and diversify traditional, contemporary and new types of cultural industries and creation. In this context, ICCSD held the seminar so as to discuss with the invited experts the impact of new digital technologies and their possible impact on the creative industry, future of work and the overall economy.

Xiao Lan, Executive Director of ICCSD was present and delivered a speech. Hans d’Orville, Chairman of ICCSD Advisory Committee and Former Assistant Director-General for Strategic Planning, UNESCO, presided over the seminar. Professor Shahbaz Khan, Director of UNESCO Beijing Cluster Office, was invited to attend the seminar as a special participant, and shared his views. Eight Chinese and foreign guests participated in the international seminar and exchanged their ideas on two main topics: “The Role of Creative Industries in the Digital Economy” and “How the Digital Economy and Technology Advances Creative Industries”.



“Digital technology is undoubtedly one of the most important core technologies in today's society. It has thoroughly changed the way we communicate and interact, the relations between us and the surroundings, as well as the forms in which we present art and culture.”



**Xiao Lan**  
Executive Director of ICCSD

“We need to bring ICT, and I would say the creativity-literate talents into our workforce”



**Shahbaz Khan**  
Director of UNESCO  
Beijing Cluster Office



**Hans d'Orville**  
Chairman of ICCSD Advisory Committee;  
Former Assistant Director-General for Strategic Planning, UNESCO

“The productivity of national economies is driven ever more by digitally based interconnectedness. All types of creative and cultural activities, performances and products, if generated and driven by digital tools, are an integral part of the creative economy and hence the digital economy.”



**Mehri Madarshahi**  
Visiting Professor of Institute for Public Policy (IPP), South China University for Technology; Former Senior Economist, United Nations

“Digitalization has been a game changer for the creative economy, impacting the entire creative value chain and changing the way we communicate, create and work. The digital age has also led to a more complex ecosystem with new large tech players entering the market.”

“In recent years, great changes have taken place in the development of China's digital cultural industries. [...] It's time to deepen the research in such fields, and we must pay close attention to how the traditional policy models and concepts should adapt to the new context.”



**Zhang Xiaoming**  
Member of ICCSD Advisory Committee; Vice Director of China National Center for Culture Studies of Chinese Academy of Social Sciences (CASS)

“The outbreak of the pandemic has shown that how educational institutions, students, and academic staff can be part of what is happening in the world. Digital technologies and digital media help to increase the sense of community, the sense of identity and the need for empathy we all had in such problematic moments. [...] Education and creative industries have to be really aware that they should be developed not only inside their communities but to other communities and to the whole planet.”



**Albert Fuster**  
Academic Director of ELISAVA  
Barcelona School of Design and Engineering, Barcelona, Spain



**Chen Hong**  
Professor of Beijing University of Posts and Telecommunications; Chief Expert of Recommendation T.621 of ITU

“Digitalization and long-distance transmission could bring cultural heritage to the communities, closer to the folks. [...] Technologies including Internet of Things and 5G have helped us better deal with various problems in developing the cultural and creative industries.”



**Li Shilin**  
Senior Researcher of Tencent Social Research Center (TSRC)

“Tencent's “Neo-Culture Creativity” is intended to foster new business forms and new business models by encouraging more users to participate in the creative process. Amidst the Covid-19 pandemic, online and digital museums have employed VR technology to help users make a virtual tour of the cultural venues.”



British video bloggers Lee John Barrett and Oliver Joshua Barrett record a video at Yangmeizhu Xiejie.



Group photo of leaders, guests and foreign influencers attending the ceremony



← Yann Debelle De Montby, Member of Advisory Committee of International Center for Creativity and Sustainable Development under the auspices of UNESCO, gives a speech on behalf of participating influencers.

→ Venezuelan video blogger Rafael (Front) tries on Beijing Opera costumes.

# 2021 Silk Road Rediscovery Tour of Beijing

**CRI NEWS**  
Photos by **Li Xiaogang**

The 2021 Silk Road Rediscovery Tour of Beijing officially commenced on June 7. The event was hosted by the Information Office of Beijing Municipality, organized by CRI Online of China Media Group. They were joined by 16 China-based foreign influencers from 13 countries including Brazil, France, Greece, Guatemala and South Korea, as well as representatives from participating government departments.

Silk Road Rediscovery Tour of Beijing is part of the specific practice of Beijing Municipality in implementing the Belt and Road Initiative, and is a

prime brand program of the city in regards to international communications as well. The program has so far rolled out eight themed tours in a line to carry out people-to-people and cultural exchanges for learning mutually from each other, attracting over 100 former political leaders, national think-tank scholars, media professionals, as well as well-known directors, photographers, bloggers and Internet celebrities from 44 countries along the Belt and Road. This year, the 2021 Silk Road Rediscovery Tour of Beijing has invited foreign influencers to take a tour themed on a centennial journey of progress. Focusing

on topics like history, culture, scientific and technological innovation and eco-environment, the participants will pay visits to multiple sites in Beijing and conduct interviews to experience and present new developments of the city. Through their eyes and lenses, the tour is expected to showcase a reliable, admirable and respectable image of China as well to the world.

Yann Debelle de Montby, Member of Advisory Committee of UNESCO International Center for Creativity and Sustainable Development, delivered a speech on behalf of the foreign influencers in participation. He said that Beijing is one of the most attractive cities in China. To him, Beijing represents the “peak” of Chinese culture, and is an

inspiring place where the past and the future meet.

During 7 to 11<sup>th</sup> June, the online influencers visited a number of other sites, including venues for the Beijing 2022 Paralympic Games, Beijing Municipal Administrative Center, E-Town Economic and Technological Development Zone, Zhongguancun National Innovation Demonstration Zone, Beijing Fun, Yangmeizhu Xiejie, “Guangyi Plus” Public Cultural Center, etc. The itinerary allowed participants to experience the blending of ancient and modern styles as well as the contentment of local residents in Beijing. Through their words and lenses, the foreign influencers will record and share impressive stories during the tour and present new images of Beijing to the world. ■

# Exploration and Innovation by “Flower Fields”

On April 12, ICCSD held its 4<sup>th</sup> exhibition. The theme of this exhibition is the cultural and creative rural construction project carried out by Baima Huatian Commune (Society of Cultural Creatives, Xuanhan County) in Bicheng Village, Baima Town, Xuanhan County, Sichuan Province. Focusing on the rural revitalization strategy and cultural and creative industries, the exhibition aims to realize the efficient utilization of rural resources with modern concepts of cultural creativity, explore new modes of rural construction with the help of cultural creativity, and promote the development of Chinese local civilization, injecting new vitality into the rural revitalization. Xuanhan Cultural and Creative Development Promotion Association (also known as Baima Huatian Commune) was founded in August 2019. It is co-sponsored by Professor Xiang Yong, Vice President of the Institute of Cultural Industry of Peking University and advisory member of ICCSD, and Mr Xiang Fangxun, founder of Zhejiang Shangshang Software Co., Ltd. and Secretary General of Xuanhan Cultural and Creative Development Promotion Association. The Association is located in Huatian International Village Maker Camp, Bicheng village, Baima Town, Xuanhan County, Sichuan Province.

Devoted to the concepts of connectivity, empowerment and co-existence, Baima Flower Fields Society of Architecture has held a series of public welfare activities and innovative practices themed on “Art Intervention and Creative Architecture” in Baima Town.


Moreover, Baima Flower Fields has also successfully hold events like the “Dabashan Fringe Festival”, “Baima Forum • International Conference of Rural Creators”, and “Forest Music Festival of Baimashan”, published the academic journal of rural innovation “Baima”, issue the declaration of rural cultural innovation “Baima Declaration”, formulate the action guide of rural cultural innovation, train the chief architect of rural innovation, build the rural innovation college, promote the relevant national departments to issue policies and measures to support rural revitalization, provide the resource platform and action network of ideas, talents and projects for rural revitalization, actively develop the local culture and creative industries, and promote the overall revitalization of rural areas.

Serving as an open and inclusive platform for international exchanges and display, ICCSD promotes and holds year-round exhibitions on the theme of “Creativity Promotes Sustainable Development”. The exhibitions are updated quarterly, and they all focus around the 17 Sustainable Development Goals of the United Nations. ■



Photos courtesy of Daba Mountain Creation Flower Field Photography Exhibition.  
Photographer: Hu Chaozhi





Futurist Alvin Toffler insists that the key literacy skill of the twenty-first century is the ability to learn, unlearn and relearn.

Unlearning is required when the world or your circumstances in that world have changed so completely that your old habits now hold you back. You can't just resolve to change. You need to break a pattern, to free yourself from old ways before you can adopt the new. [...] It means putting the watch on your other arm. It means becoming a student again because your training doesn't comprehend the task before you. You have to, first, see your present patterns, then, second, you have to learn how to break them. Only then do you have a chance of seeing what you're missing.

[...] The process of unlearning in order to relearn demands a new concept of knowledge not as a thing but as a process, not as a noun but as a verb, not as a grade-point average or a test score but as a continuum. It requires refreshing your mental browser. And it means, always, relying on others to help in a process that is almost impossible to accomplish on your own.

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