

Visionary realms

Regenerative communities:

How to build resilience
with responsible
development



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FT LONGITUDE

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Introduction



Responsible development fosters regenerative communities

Around the world, communities are feeling the effects of overdevelopment and overconsumption of natural resources. The effects of climate change are hitting them with increasing regularity, destroying livelihoods and setting back efforts to alleviate poverty and build prosperity.

Many of the world's oldest cultural landscapes and communities are also the most vulnerable, and policymakers, planning authorities and developers are having to find new ways to protect them. Responsible development models seek to balance economic prosperity, social outcomes and respect for humanity's shared cultural heritage with the needs of the natural world. And from these a new goal is emerging: to create truly regenerative communities that restore and renew both natural and human systems.

This report explores how different global models for responsible development are aspiring to build resilience and foster regenerative communities.

By focusing on regenerative development, planners are designing environments that are guided by the principles of economic, social and environmental sustainability. And by putting people at the heart of their plans, they are shaping new ways of living that solve the problems associated with traditional development and urbanisation.

Responsible development models also integrate a fourth element of sustainability alongside economic, social and environmental factors: cultural sustainability. They show how development can reinvigorate the cultural heritage of a place and its communities.



There has yet to be an example where humans have come into an area and left it better than we found it. In recent years, our aspiration for sustainability has been, 'Can we leave it more or less as good as it was?' And we've struggled even with that. But we need a higher aspiration: regeneration.

Karim Elgendy

Associate director,
Buro Happold

1

Purpose underpins regenerative development

Authorities, planners and developers are redefining economic sustainability. Traditional economic metrics, such as job creation and the impact on GDP, continue to be important, but there is growing recognition that truly sustainable economies generate value that is not measurable in the usual ways.

The shift has been encouraged by global policymakers. The UN Sustainable Development Goals (SDGs), for example, include the goal of making cities and human settlements inclusive, safe, resilient and sustainable. It is helping change the terms of the debate about investment in development.

Carlo Castelli, founder of Urban Purpose and co-chair at Urban Regeneration Council Europe at the Urban Land Institute, argues that planning authorities should be empowered to go further. “We need to dramatically and fundamentally change the way in which we envision, measure and invest in projects,” he says. “We need what I call a ‘purpose case’ approach.”

It starts with the understanding that economic value does not only come from jobs created or investment attracted, but also from the quality of life created for residents.



Comprehensive measures for economic impact

Key to building the case for purpose-driven development is to avoid investment discussions being dominated by blunt measures of economic value. This means using a range of metrics aligned under a consistent framework.

“The SDGs are the best way of helping cities to measure their impact,” says Meskerem Brhane, regional director for sustainable development, Middle East and North Africa at the World Bank. She says cities need to measure their progress in three dimensions: economic, social and environmental.

“On the economic aspects, we would look at two things,” says Brhane. “One is the population’s access to basic services and infrastructure: water, electricity and the transportation network,” she says. “Then we look at spatial planning,” continues Brhane. “That might include ensuring pedestrian accessibility. In a lot of developing countries, cities are not at all pedestrian-friendly.”

Further economic metrics include assessing youth unemployment or tracking disparities in economic opportunities, such as between women and men. Key measures for society and culture include education levels, school enrolment, adult literacy and health aspects, such as life expectancy, maternal mortality and the availability and affordability of health care. Environmental measures include air quality, greenhouse gas emissions, water quality, waste management, noise and the availability of public spaces including green spaces. Together, such metrics provide a more complete picture of progress in development.



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Meskerem Brhane

Regional director for sustainable development,
Middle East and North Africa, World Bank



We took quality of life and wellbeing as key metrics and articulated them into a number of categories — from green open spaces to pedestrianisation of streets, walkability and so on. By the end of the process, we were able to measure and monetize these things.

Carlo Castelli

Co-chair, Infrastructure & Urban Development Council UK,
Urban Land Institute

Quality of life: Recognise the value of wellbeing

The increasing emphasis on quality of life is a relatively recent development as a deliberate approach to planning and design. Carlo Castelli argues that it is still not sufficiently prominent for many planning authorities.

“Until recently, economic and financial returns were seen as the only metric that mattered,” says Castelli. “But we are making huge progress in measuring social, environmental and cultural value.”

He points to the emergence of frameworks that allow authorities to assess the value delivered by development projects on a broad basis. One of these is the [Quality of Life Framework](#), which identifies a wide range of areas that influence people’s physical, social and psychological wellbeing, including health, nature and community.

The economic value of wellbeing can be vast, says Castelli. When he was head of cities solutions at consultancy firm Jacobs, he worked on a [project evaluating the Edinburgh City Centre Transformation Strategy](#). “We took quality of life and wellbeing as key objectives and articulated them into a number of categories and KPIs— from green open spaces to pedestrianisation of streets, walkability and so on,” says Castelli. “By the end of the process, we were able to measure and monetize these things.”

The results give us an idea of the potential value of focusing on quality of life. “From an upfront value of roughly £110mn of economic value benefit, we ended up showing that more than £300mn of wellbeing benefits had been delivered,” says Castelli. “This is transformational.”

Culture and heritage: Develop urban heritage sites

Development authorities are also increasingly recognising the value of cultural heritage — a measure that flows directly from SDG 11 on sustainable urban development. National identity, arts and creativity are essential for creating a shared sense of place and increased civic pride, says Brhane.

“It could be communities honouring their traditions through music, how they engage youth, or the sense of place and identity — all of these can be measured,” she says. Monitoring the financial resources invested in culture can be complemented by survey-based data and global benchmarking. Brhane points to the success of Denmark and its capital Copenhagen, which frequently score highly in global happiness and quality of life surveys.

Aruna Gujral, director-general at the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), says that the immense value of cultural assets cannot be overlooked. “Cultural heritage seems like a niche concern — something that’s nice to have but not a priority. However, if destroyed, it is an irreparable loss. The moment that culture is gone, it’s gone — and with it all its immense value for humanity and the planet.”

Cultural heritage can generate economic benefits. “Through initiatives aimed at the sustainability of our cultural resources we can also achieve positive outcomes in the economic sphere,” says Gujral. “It can bring economic growth, create job opportunities and alleviate poverty.”

Brhane reflects on her work in China before she joined the World Bank, where developers tended to pull down and rebuild historic buildings — weakening the unique sense of place for residents and undermining the appeal to tourists. “People want to discover places that look very different from their own,” she points out. “We worked on ways to identify and list heritage assets, and to rebuild them using the same techniques,” she explains. “That creates job opportunities for younger people, reviving skills that were diminishing and creating a community of elders or master craftspeople who can share their trade.”

AlUla: Regenerative development in north-west Saudi Arabia

One project where new ideas of value are being brought to life is the development of AlUla county in Saudi Arabia.

The Royal Commission for AlUla's (RCU) 'Journey Through Time' masterplan sets out 12 guiding principles — from safeguarding the natural and cultural landscape to celebrating heritage, culture and arts as a global destination. This commitment to 'light touch' tourism will drive sustainable economic growth: RCU aims to attract two million visitors to AlUla annually, contributing SAR 120bn (USD32bn) to national GDP and creating 38,000 new jobs by 2035.

In late 2023, RCU launched the 'Path to Prosperity' masterplan to advance community wellbeing and boost socio-economic opportunities, explains Navdeep Hanjra, vice president of planning and development for RCU. "Masterplans provide a comprehensive and integrated approach to spatial development that takes into account the diverse needs of residents and visitors," says Hanjra.

The masterplans reflect a broad set of priorities — from fostering innovation and entrepreneurship to addressing social and environmental issues, explains Hanjra. "These holistic strategies are how we ensure that we will deliver the quality of life that we've committed to with AlUla's communities," she explains. In reality, this includes building a low-carbon tramway to help deliver on the promise of 'subtle connectivity and accessibility', while a commitment to involve and enable the local community is a guiding principle for neighbourhood planning.

The ultimate success of AlUla's development will not only be measured by visitor numbers or GDP growth. Its evaluation also hinges on the impact on residents' wellbeing and their access to improved housing, healthcare and education, plus new transport infrastructure, green spaces and civic spaces that provide a focus for a revitalised local economy. "Those factors shape the financial model, and they are how we will measure success every year," says Hanjra.



2

Liveable neighbourhoods:

Urban spaces must be redesigned
around community needs

With residents' wellbeing shaping a new view of economic sustainability, it is essential for planning authorities to think carefully about residents' interests and opportunities.

This is about rethinking how communities experience place and prioritising thriving, sustainable neighbourhoods. It means taking a holistic view of residents' needs — of everything from housing to healthcare, education to entertainment, and sports to social spaces.

And it means recognising the value of cultural heritage — both tangible, including architecture, physical objects and natural features, and intangible, including the traditions and knowledge passed between generations — in creating a sense of place and community identity.



Mixed-use communities: The future of planning?

“One of the most-discussed ideas among urbanists is the so-called 15-minute city,” says Carlo Ratti, professor of urban technologies and planning at the Massachusetts Institute of Technology and co-chair of the WEF Global Future Council on Cities of Tomorrow. “It emerged as an alternative to modernist single-use zoning, which separates homes, offices and retail into discrete areas.”

The idea is simple: citizens should be able to access most of the services and amenities they need close to home.

“Fifteen-minute cities replace single-use zones with mixed-use neighbourhoods,” says Ratti. “Offices, schools, shops and parks are all within a 15-minute walk or bike ride from your home. Commutes are reduced, while food deserts and dead neighbourhoods turn into lively communities.”

The environmental benefits of the 15-minute city concept have started to influence policymaking around the world, and the idea is central to the development of AIUla (see case study, page seven). “Our plans are based on making sure that the communities that are being developed are as self-sustaining as 15-minute cities,” says RCU’s Navdeep Hanjra.

In AIUla, the five masterplans scheduled for development by 2035 will create thriving communities with residential and mixed-use areas. “People might have a health centre next to their house rather than having to drive 20 kilometres,” says Hanjra. “They’re going to have a pharmacy, supermarket, cinema and park close to their house.”

Housing: Neighbourhoods need homes — new and old

One crucial foundation for successful neighbourhoods is, of course, the availability and affordability of housing. This is a particular concern in urban communities where wealth inequality and soaring prices are pushing existing residents out of their own neighbourhoods.

It is an issue, too, in development projects that focus on tourism. “Too often where there are particular touristic offers and high-level luxury destinations, we see that jobs are created but housing is somehow decoupled from the place,” says the Urban Land Institute’s Carlo Castelli. “That has a number of negative implications, starting with sustainability. Providing affordable housing close to jobs is key.”

This requires the development of new housing sites to accommodate growing populations. But it can also involve the regeneration of historic urban centres, which not only supports social equity, but also help to direct investment into the protection of culturally valuable assets.



The KORU Project: Restoring historic buildings and preserving cultural heritage

One project that has explored the links between social improvements and regeneration is the KORU Project in the Turkish town of Mardin.

Banu Pekol, who worked on the project, explains that it was centred around the renovation of a typical historic house in the old town centre. Much of the population has moved away from the neighbourhood as buildings have deteriorated, leaving the centre inhabited by only the town's poorest residents. And the buildings have continued to deteriorate.

"Leaving buildings in disrepair adds to rising inequality in the region," says Pekol. So in addition to showcasing restoration techniques that could rejuvenate the town's identity, the project has also been an investment in the town's people, empowering them to preserve their town's much-loved cultural heritage.

"We developed training for custodians of cultural heritage — or monument keepers, as we call them," explains Pekol. The residents of historic homes were taught techniques for maintaining and restoring their houses to preserve the neighbourhood's character, as well as being offered opportunities to learn about the legal context. "In everything we did there was a strong practical component," adds Pekol.

The KORU Project shows how restoring historic housing stock can help to reduce poverty while renewing the sense of civic identity embedded in urban spaces. It is also empowering communities with new skills that can help them regenerate and preserve their cultural heritage for future generations.



For communities to truly flourish in civic engagement they must foster an environment where active participation is not just encouraged but integral to urban development. By creating spaces — both physical and digital — where residents can share their ideas and concerns, cities can embrace a bottom-up approach that allows citizens to actively co-create their environments.

Carlo Ratti

Professor of urban technologies and planning, Massachusetts Institute of Technology; member of the WEF Global Future Council on Cities of Tomorrow

Transport: Build social equity through sustainable mobility

Transport options that stimulate economic activity and support social equity while also meeting environmental requirements are another critical strategy for development authorities.

Research shows that transport links are crucial to the success of 15-minute cities, says Carlo Ratti: “Fifteen-minute cities work well — provided they are not interpreted in the strictest sense. They must be paired with investment in transport between neighbourhoods.”

Affordable transport is critical for enhancing social outcomes, not least because of its role in getting residents to work. One example is Curitiba in Brazil, whose Bus Rapid Transit is still seen after so many decades as a global benchmark for the importance of public transport in cities. Carlo Castelli explains that architect and three-time mayor Jaime Lerner implemented “a number of mobility and transport policies to help low-income communities be as close as possible to the jobs they desperately needed.”

There was a similar approach in Bogotá, Colombia under the two-time mayor Enrique Peñalosa. He initiated the development of the city’s mass transport system and installed more than 300km of protected bike lines, and says, “An advanced city is not one where even the poor use cars, but rather one where even the rich use public transport.”

Civic engagement: Dialogue empowers communities

Another feature of great communities is a strong sense of civic identity and active engagement, and this means designing places that make this easy.

“For communities to truly flourish in civic engagement they must foster an environment where active participation is not just encouraged but integral to urban development,” says Carlo Ratti. “By creating spaces — both physical and digital — where residents can share their ideas and concerns, cities can embrace a bottom-up approach that allows citizens to actively co-create their environments.”

This also requires communities to be engaged in the process of development itself and empowered to influence it.

“The principle of putting community needs first is key because if you don’t, you won’t be taken seriously,” says Banu Pekol. “The measures you implement will probably not be compatible with the context, and once you’ve left you will have no legacy.”

Navdeep Hanjra underlines the importance of earning community buy-in. “We learned very early on that if we plan not around the people, but with the people, the plan is always more results-oriented and more adaptive,” says Hanjra.

Dialogue can transform how difficult moments are handled and how residents respond to issues. “Community consultation is not always easy,” says Hanjra. “But if you have a dialogue with the community, those difficult conversations become easier.”

3

Communities can become resilient in the face of environmental risk

Measures that increase a community's resilience to the threats facing them in a crowded and warming world are core focus for responsible development programmes. Beyond the obvious need for a live/work/transportation proximity, it also means addressing the use of natural materials and energy sources and turning them into renewable resources, such as materials, renewable energy and even renewable water. This can optimise communities' footprints by embedding them in circular economy and circular carbon economy strategies that can be manifested and continuously remanifested for use across time.

It is the difference between being "eco-efficient" and "eco-effective", explains William McDonough, founding principal of William McDonough + Partners and co-author of *Cradle to Cradle: Remaking the Way We Make Things*. It will not be enough for humanity to simply become more efficient in its use of resources, he argues. "Net zero of things we don't want isn't as magically creative as one might think. We need to add to net-zero bads, net-positive goods. The real goal is achieving net-positive results that provide perpetual assets for coming generations."

Enhancing communities' capacity to adapt to a changing climate may start with rethinking the idea of the city.

"Cities are the greatest achievement of mankind, yet we've advanced economics above all else, creating two injustices: for our environment and for ourselves," says Karim Elgendy, who leads urban sustainability consulting at Buro Happold.

"Large human settlements are primarily economic machines," says Elgendy. "Urban areas have been developed in a way that, first and foremost, serves the interest of capital. But this model overlooks externalities such as the environment and social aspects."



Infrastructure: Increase resilience with lower-carbon, more self-sufficient cities

On the one hand, it is essential to design for improved resilience to mitigate the increased risks created by a changing climate. Yet it is also essential that the communities of the future prioritise environmental sustainability.

Estimates suggest that cities are responsible for **75 per cent of global CO2 emissions**, with transport and buildings among the largest contributors. Low-carbon transport is especially important, so it is vital to build infrastructure for electrification — whether buses, trains or private cars.

Achieving environmental sustainability means reducing both resource consumption, such as energy, water and materials, and waste production, including refuse, wastewater and carbon emissions. Urban communities will always rely on their hinterland for resources such as food and energy, but if more can be produced within urban spaces — and if towns and cities can be designed to use less — then the net result is not only more sustainable but more resilient communities.

For those involved in developing regenerative communities, mitigating the threats created by a changing climate is critical. The dangers caused by rising temperatures and changes in rainfall patterns, for instance, can lead to both more drought and more floods.

“Global temperatures are expected to go up by two degrees because of climate change, and in some parts

of the world, including the Middle East, it’s expected to be twice the average,” says Elgendy. “Planners can’t control that, but what they can do is mitigate the effects in urban areas. You try to offset the heat stress that will result from higher average and maximum temperatures by reducing the impact of your development model.”



Global temperatures are expected to go up by two degrees because of climate change, and in some parts of the world, including the Middle East, it’s expected to be twice the average. Planners can’t control that, but what they can do is mitigate the effects in urban areas. You try to offset the heat stress that will result from higher average and maximum temperatures by reducing the impact of your development model.

Karim Elgendy

Associate director,
Buro Happold

Building design: Traditional standards mitigate environmental threats and preserve cultural identity

This is critical both at the neighbourhood-planning level and in setting standards for building work. “If you’re creating a new neighbourhood, then design helps reduce urban heat island effects,” says Elgendy. “There are many ways to do this — from material choices and building colours to integrating green infrastructure to help regulate temperature and humidity.”

Traditional knowledge in urban planning and design can offer lessons for modern planners who are aiming for sustainability, according to ICCROM’s Aruna Gujral. “For example, historic water canals were designed not to rely on electricity but to follow gravity,” says Gujral. “Buildings were constructed to remain cool in the summer and warm in the winter by capturing sunlight, and windows were placed in such a way as to create natural ventilation systems.”

This is another proof of the value of cultural heritage. “The heritage sector can actually offer very good lessons and best practises for modern green cities,” says Gujral. “These solution-oriented traditional methods can contribute towards climate change mitigation.”

One example of how traditional techniques are being reflected in contemporary planning is AIUla’s architectural guidelines. These are consciously inspired by traditional building practices and encourage the use of local building materials, helping ensure that buildings are well-suited to the local environment.

In doing so, it ensures that the natural landscape will be preserved in a culturally appropriate way, says McDonough. “If you go to AIUla, or any city that has an

ancient element, you see that the people were dealing with the genius loci. They were designing for that place,” he explains. Lacking the technology of modern designers, people adapted to their environment. “They didn’t have a choice, but what comes out of it is wisdom of place and wisdom of culture.”

Such wisdom should be a touchstone for planning authorities and designers today, he argues. “What we now look for is a combination of ancient wisdom integrated with modern intelligence,” he says. “We can do smart things that are culturally appropriate and they are going to be effective in the natural world at the same time.”

The use of building materials, ancient and modern, highlights this duality. Sand is essential for modern building — yet dune sand, readily available in the Middle East, is unsuitable for concrete because of its rounded grains. Iconic developments, including the Burj Khalifa in Dubai, have used Australian sharp sand. “Think of the carbon emissions in shipping something as basic as sand halfway around the world,” says McDonough. “And excavating sand from beaches and riverbeds is destroying ecosystems and biodiversity worldwide.”

To tackle this, McDonough and a team at KAUST led by Professor Jorge Gascon, developed a solution. “We found a way to use local dune sand. It’s beautiful, and it can reduce transport emissions by 60%.” The technique is set to be adopted widely, he believes.

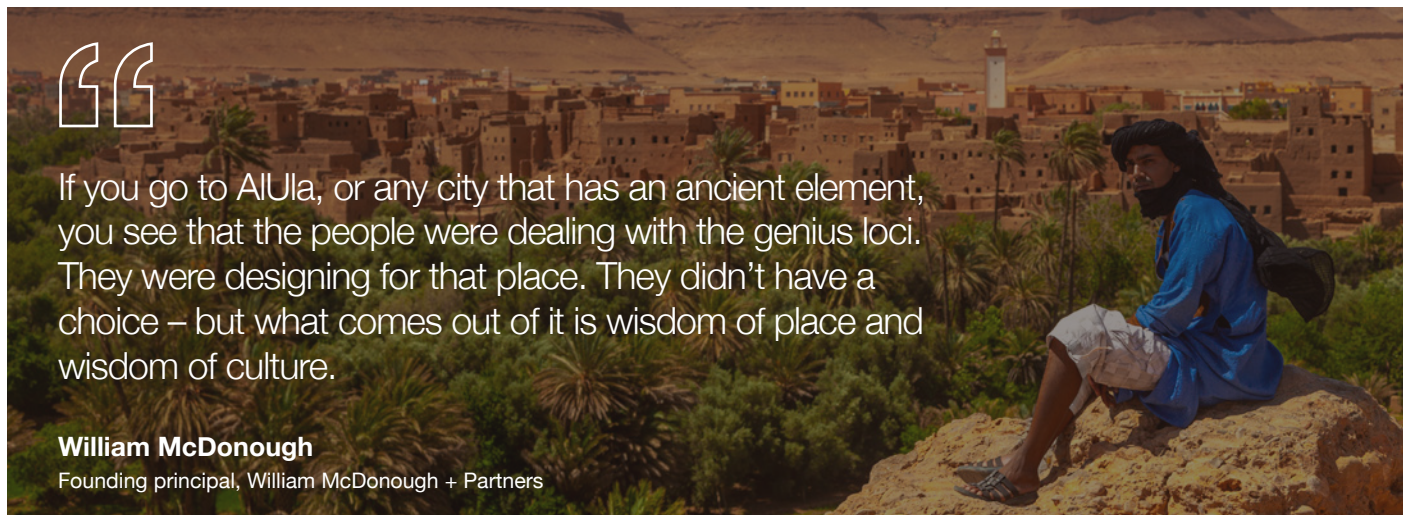
Ultimately, it reflects the importance of designing for place and thinking locally. “Unless you have a growth platform that includes local materials, local energy, local all things, you don’t have resilience, because you don’t have built-in restoration and regeneration. All sustainability is local.”

“

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William McDonough

Founding principal, William McDonough + Partners



The Loess Plateau and Al Baydha: Using nature to reduce flood risk

When it comes to flooding, some of the best ways to mitigate growing risks come from a renewed appreciation of natural systems. Urban development and desertification increase flood risks, so building natural flood defences into development projects should be a priority.

The Loess Plateau project in China, which was initiated in the mid-1990s, is still “the best example of regenerative development”, according to Karim Elgendy. Designed to restore natural systems that had been eroded by over-farming and desertification, the project introduced sustainable agricultural practices that helped increase biodiversity and mitigate flood risks.

On a smaller scale, the Al Baydha Project in rural western Saudi Arabia has also tackled the threat of flooding by drawing on the power of nature — in this case by creating wadis (channels) and using planting to increase the ground's capacity to absorb water.





Waste: Design the circular city

For regenerative development to be a success, environmental considerations must be integrated into every aspect of development. That means designing for the circular economy.

“Circularity isn’t recycling on steroids,” says Elgendy. “It is designing things with end of life in mind, so the end of their life becomes the beginning of a new life.”

Developers aim to reduce resource consumption, particularly energy and water, and reuse waste products. But the circular economy also applies to the physical fabric of a city — to the built environment.

“How can the city design its buildings so they can be flexible — turned from one function to another?” asks Elgendy. “If they are no longer needed, can they be disassembled and their raw materials used for something else?” Designing for flexibility, adaptability and modularity is a major challenge for planners and designers.

The potential of the circular mindset is showcased by developments such as the award-winning [NASA Sustainability Base](#) building in California designed by William McDonough + Partners. It is designed as a living laboratory, with both passive and active heating/cooling and daylight strategies to optimise energy use, and the intention is that closed-loop energy and water management systems can be implemented over time. The building is also designed to facilitate future uses and even disassembly of its parts for reuse.

“

Circularity isn’t recycling on steroids. It is designing things with end of life in mind, so the end of their life becomes the beginning of a new life.

Karim Elgendy

Associate director,
Buro Happold

A scenic view of a park with a paved path, trees, and a building in the background. The path is lined with trees and leads towards a building with a dome. The foreground is filled with green foliage, and the background shows a cityscape with a large building and a dome.

Conclusion

How to build a regenerative community

Responsible development aspires to build resilience and foster regenerative communities that restore and renew both natural and human systems.

The best global models put people at the heart of the plan and are guided by the principles of economic, social and environmental sustainability.

Seven learnings that policymakers, planners and developers should be considering from the outset.

1

Encourage regenerative aspiration

The scale of the challenges facing humanity and our planet demands an ambitious response. True sustainability requires us to create regenerative communities that can both steward their natural environment and improve social outcomes.

5

Learn from local ways of life

Traditional ways of life can reveal clues for how to build the regenerative communities of the future. Local building materials and practices can show us how to construct buildings that use resources more efficiently and design street layouts that manage heat better.

2

Integrate cultural heritage to create a strong sense of place

World-class responsible development models recognise the value of cultural heritage and weave it into the plans. Not only does history create new economic opportunities, such as through tourism, it also shapes cultural identity. The best developments cherish, reinforce and reinvigorate that identity.

6

Use nature to increase resilience against climate threats

Often, the best ways to improve communities' resilience to climate disruption come from natural systems. Increased planting can mitigate flood risks, and incorporating green spaces into urban areas can reduce heat build-up.

3

Use the 15-minute city idea to build vibrant neighbourhoods

The 15-minute city is a valuable model for creating more liveable neighbourhoods. Creating districts that cater to work and residential needs and provide a range of services and amenities is a powerful way to improve quality of life and sustainability.

7

Think circular

One of the biggest challenges for development projects is to reduce and ultimately eliminate waste. To do this, developers need to build circularity into the utilities and services provided in the community, as well as into the fabric of new buildings. This means considering the end of a product's life at the very beginning.

4

Invest in sustainable transport

Inclusive and dynamic neighbourhoods must be accessible, and affordable transport improves social outcomes.

About the report

Thank you to our experts

This report is based on the insights of eight experts who either took part in interviews or submitted written responses. It was written by FT Longitude, the specialist thought leadership division of the Financial Times Group.

We would like to thank the following experts for their time and insight:



Meskerem Brhane
Regional director
for sustainable
development,
Middle East and
North Africa,
World Bank



Carlo Castelli
Founder, Urban
Purpose; co-chair,
Urban Regeneration
Council Europe at the
Urban Land Institute



Karim Elgendy
Associate director,
Buro Happold



Aruna Gujral
Director-general,
International Centre
for the Study of
the Preservation
and Restoration of
Cultural Property
(ICCROM)



Navdeep Hanjra
Vice president,
planning and
development,
Royal Commission
for AlUla



William McDonough
Founding principal,
William McDonough
+ Partners; co-author
of *Cradle to Cradle:
Remaking the Way
We Make Things*



Dr Banu Pekol
Cultural Heritage
Peacebuilder and
creator of the KORU
Project



Carlo Ratti
Professor of urban technologies and planning,
Massachusetts Institute of Technology;
co-chair of the WEF Global Future Council
on Cities of Tomorrow; full professor at the
Politecnico di Milano in the Department
of Architecture, Built Environment and
Construction Engineering

About The Royal Commission for AlUla

The Royal Commission for AlUla (RCU) was established by royal decree in July 2017 to preserve and develop AlUla, a region of outstanding natural and cultural significance in north-west Saudi Arabia. RCU's long-term plan outlines a responsible, sustainable, and sensitive approach to urban and economic development that preserves the area's natural and historic heritage while establishing AlUla as a desirable location to live, work, and visit. This encompasses a broad range of initiatives across archaeology, tourism, culture, education, and the arts, reflecting a commitment to meeting the economic diversification, local community empowerment, and heritage preservation priorities of the Kingdom of Saudi Arabia's Vision 2030 programme.

الهيئة الملكية لمحافظة العلا
Royal Commission for AlUla

