

Data centers as ecosystems

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Re-imagining Data centers for
Regenerative Future

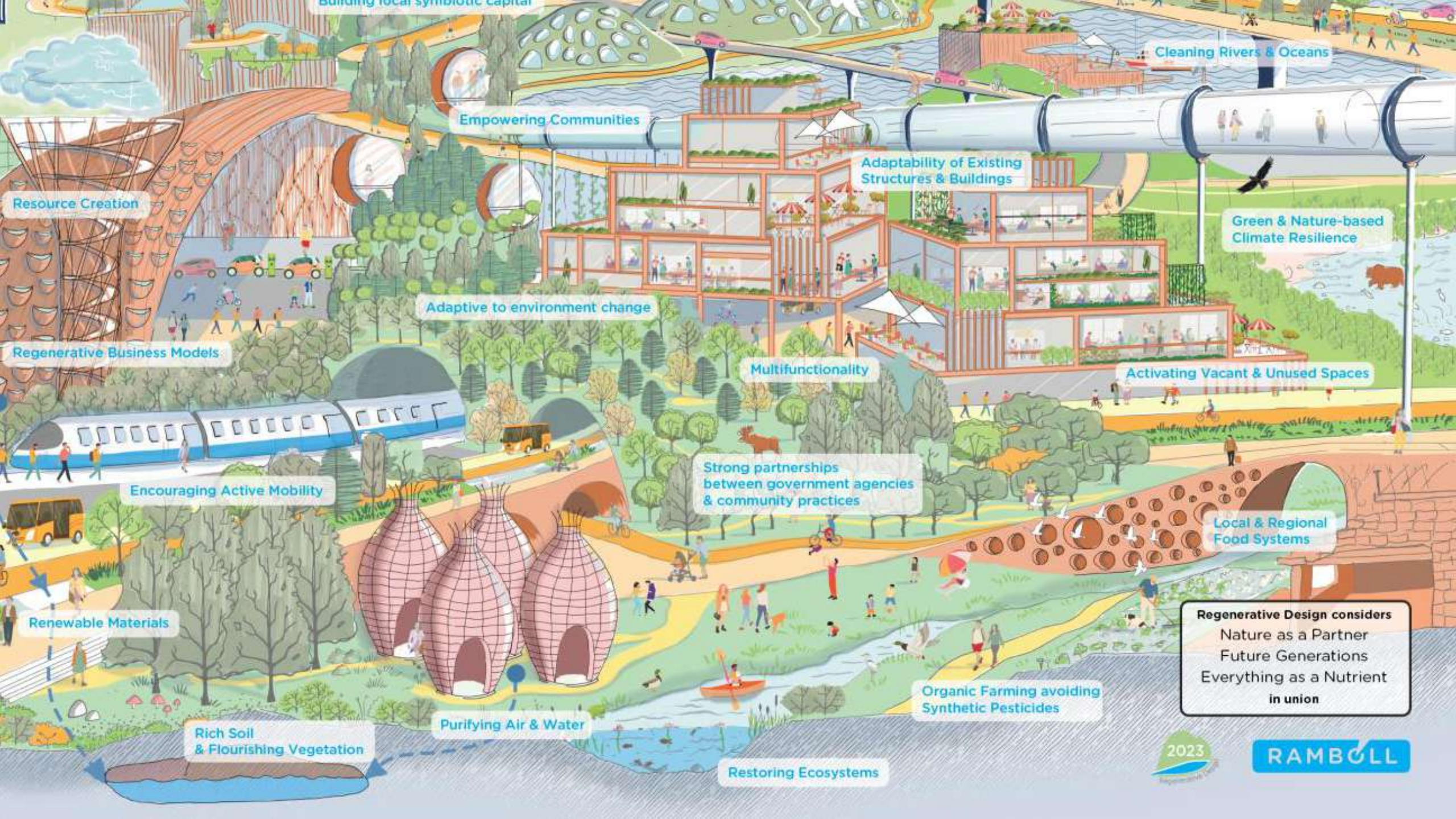


What if we could create multi-objective solutions, creating cost-effectiveness at the same time?

What if we could create a symbiotic system that creates long-term resilience and co-benefits in a place?

What if we thought that there is no waste?

What if rather than causing biodiversity loss with our designs we would actually create new ecosystems?



Cleaning Rivers & Oceans

Empowering Communities

Adaptability of Existing Structures & Buildings

Green & Nature-based Climate Resilience

Resource Creation

Adaptive to environment change

Regenerative Business Models

Multifunctionality

Activating Vacant & Unused Spaces

Encouraging Active Mobility

Strong partnerships between government agencies & community practices

Local & Regional Food Systems

Renewable Materials

Organic Farming avoiding Synthetic Pesticides

Rich Soil & Flourishing Vegetation


Purifying Air & Water

Restoring Ecosystems

Regenerative Design considers
Nature as a Partner
Future Generations
Everything as a Nutrient
in union

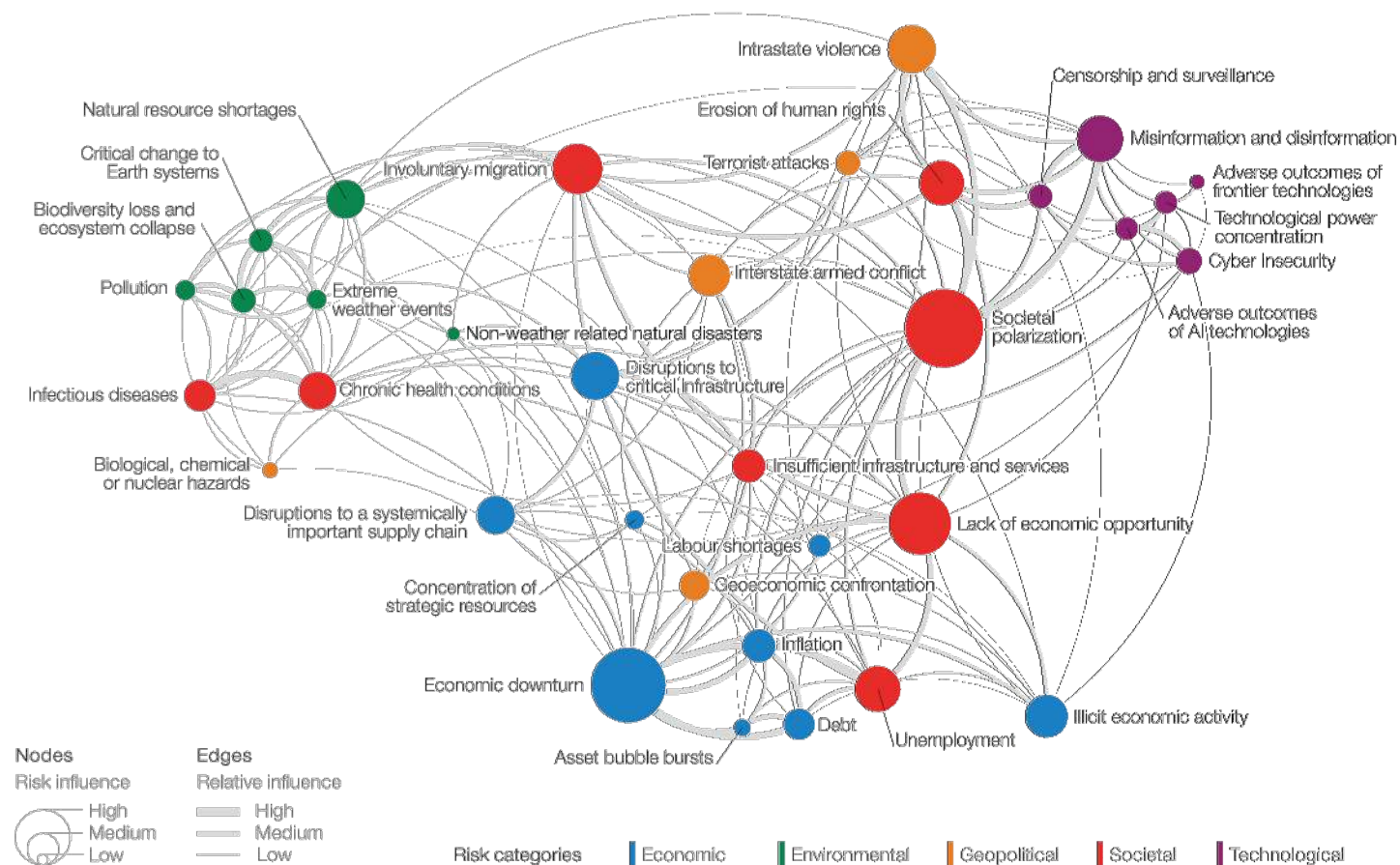


What is Data Center at its full potential?

An aerial photograph of a rural landscape. A multi-lane highway runs diagonally from the top center towards the bottom right. The surrounding area is a patchwork of green fields, some of which appear to be recently plowed or harvested. There are some small clusters of trees and a few buildings visible in the distance. A large, semi-transparent dark blue rectangle is overlaid on the center of the image, containing white text.

Our buildings and infrastructure
have typically been built for
only one purpose and for an
environment that no longer exists.

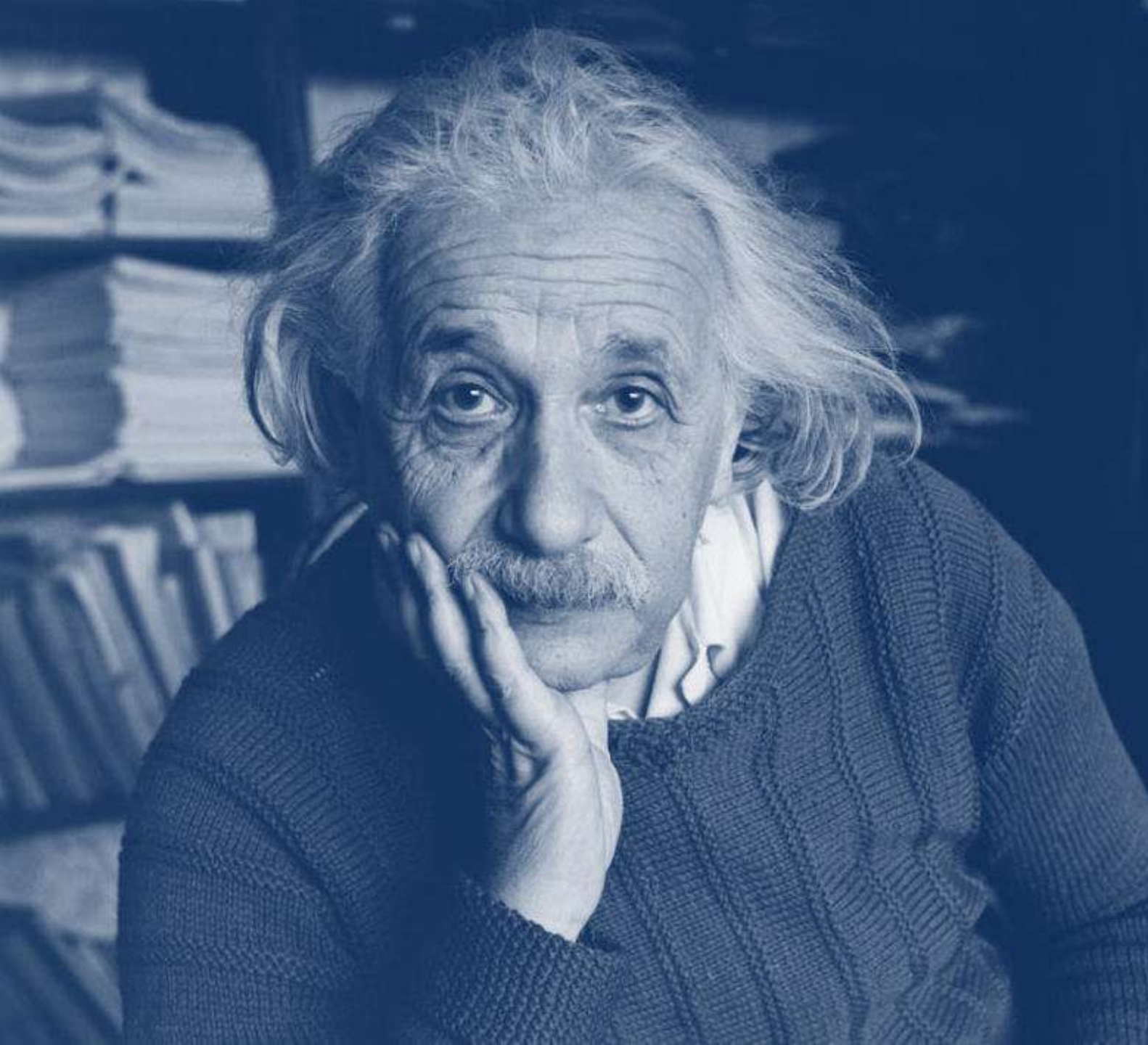
Looking into the future to tackle the risks now



Source
World Economic Forum Global Risks
Perception Survey 2023-2024.

10 years

- 1st Extreme weather events
- 2nd Critical change to Earth systems
- 3rd Biodiversity loss and ecosystem collapse
- 4th Natural resource shortages
- 5th Misinformation and disinformation
- 6th Adverse outcomes of AI technologies
- 7th Involuntary migration
- 8th Cyber insecurity
- 9th Societal polarization
- 10th Pollution



We cannot solve our
problems with the
same thinking we
used when we
created them.

- Albert Einstein

"Best practice" is a moving target

We need to see things differently.

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Doing nothing
Business as Usual

01

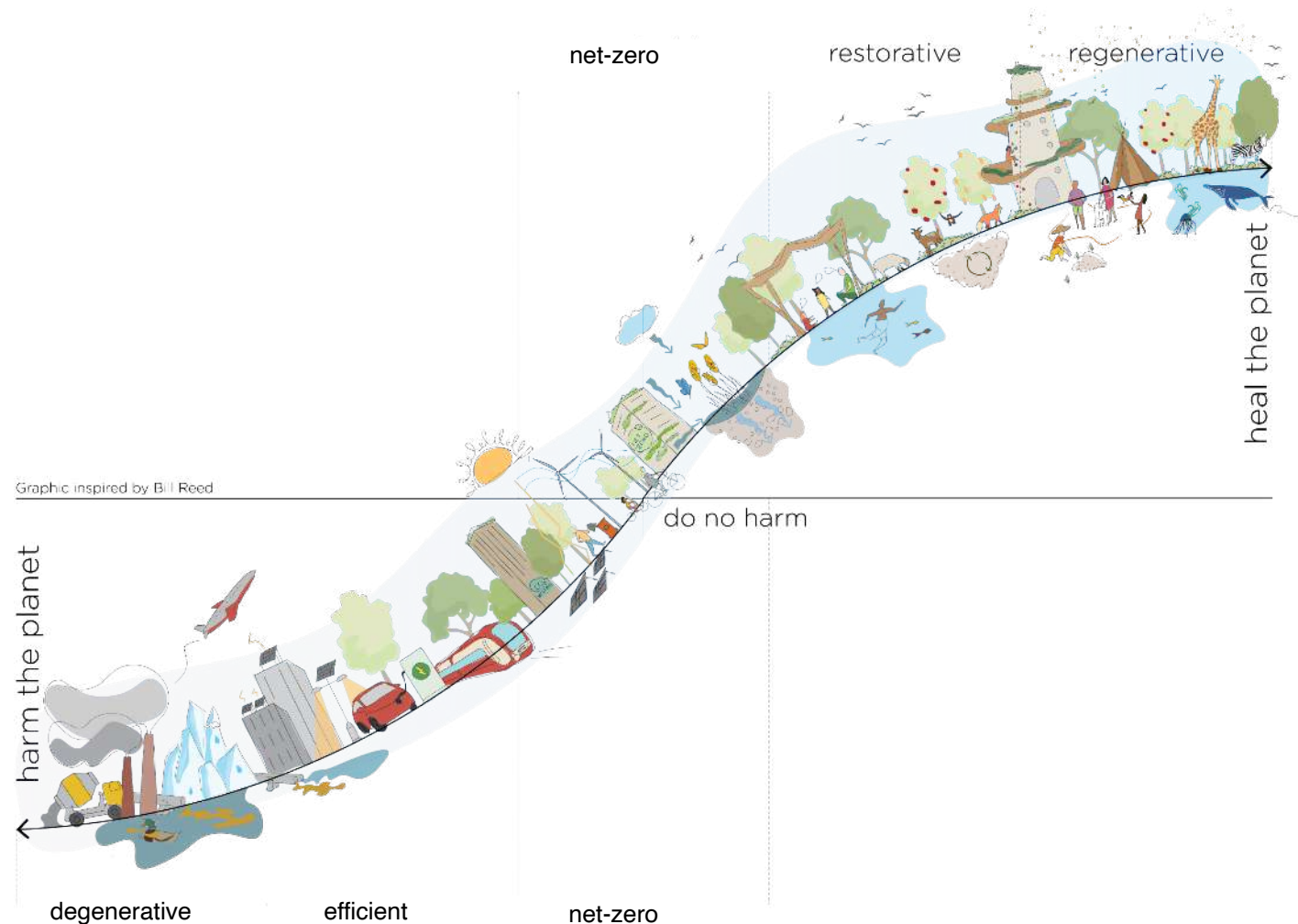
Doing things better
Efficiency Gains

02

Doing better things
Net zero-net positive

03

Seeing things differently
Transformative and regenerative



Seeing things differently

Systems and regenerative thinking

Regenerative thinking is living systems thinking.

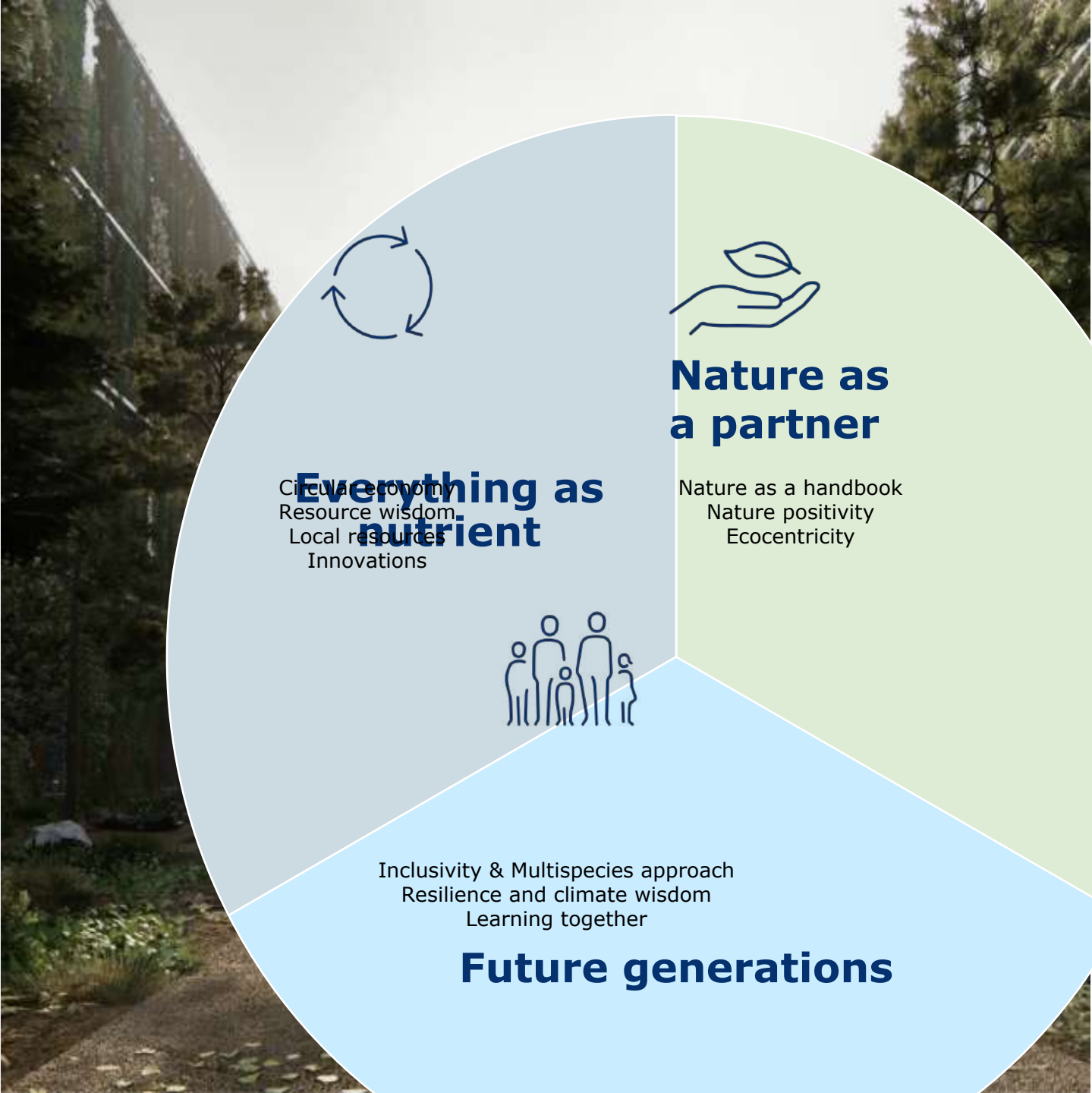
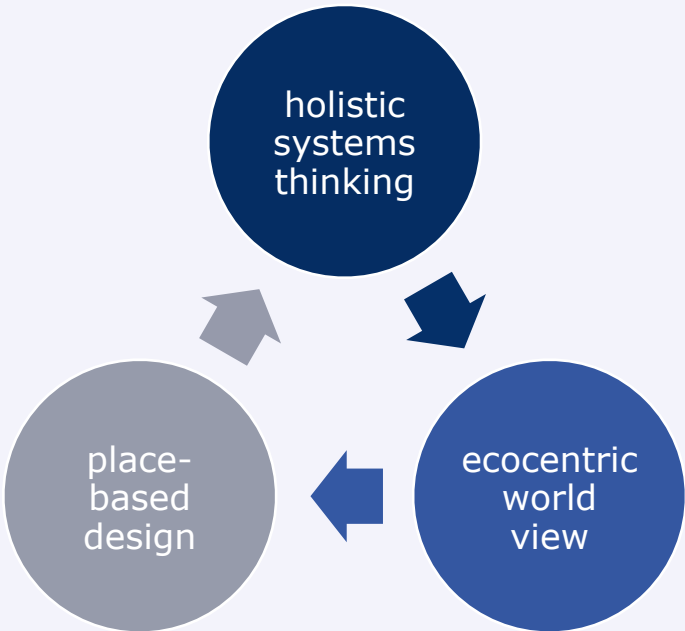
- What if our buildings and infrastructure could actually be a dynamic, life-oriented, resilient, circular and self-renewing system?
- What if we could increase effectiveness and proactively assess impacts by locating the net-positive leverage points?
- What if we could secure the future of our business by securing the future itself?



Regenerative approach improves prosperity and quality of life by creating places that are fit for the future.

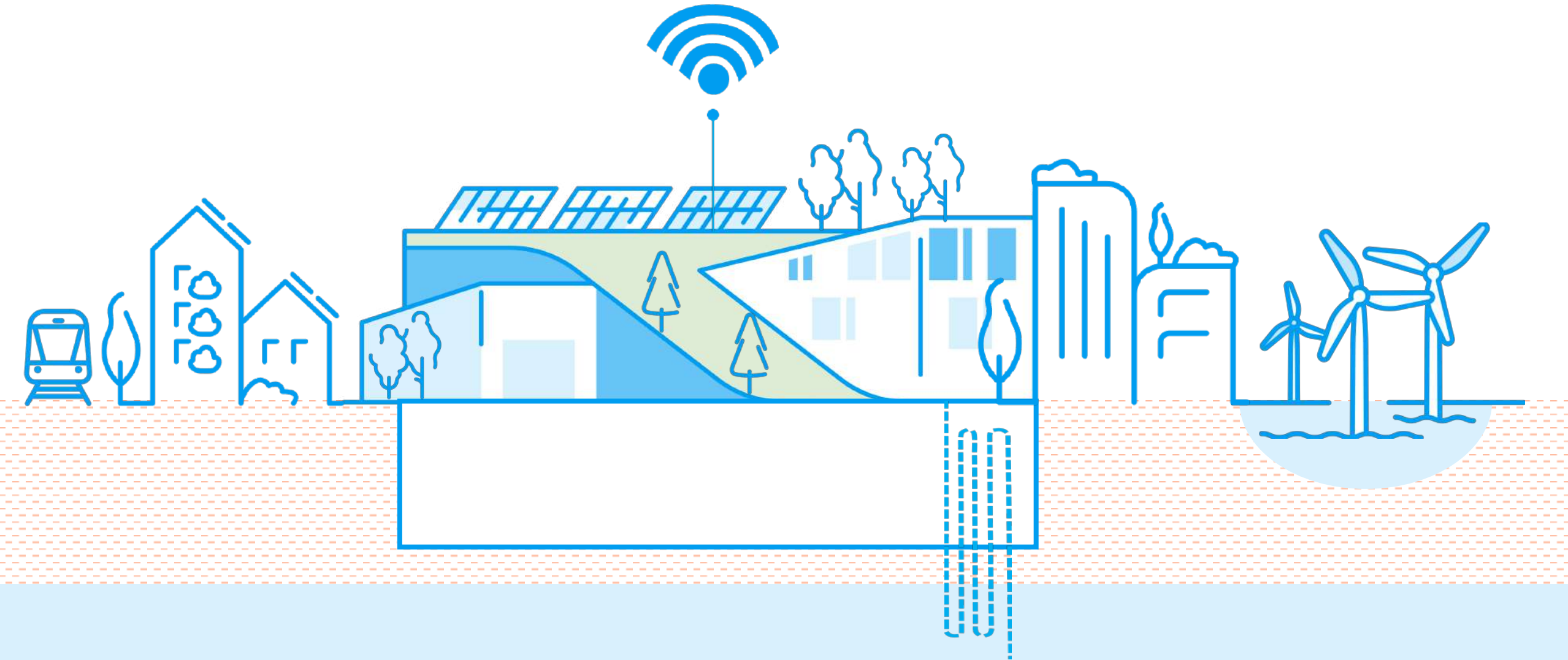
The goal: flourishing environments and communities, that are dynamic, emergent, resilient and circular.

The by-product: sustainability.



Aiming for full potential,
net-positive, dynamic,
symbiotic system

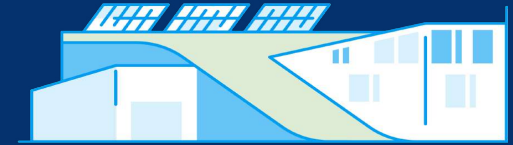
Imagine a data center as a living system



Value-creation in nested systems



Mindset change



Building new



Using existing, recycling,
repurposing, reclaiming



Using existing and degenerative
sites and circular materials



Technical systems



Living systems



Ecosystem restoration (cooling, carbon
sequestration, climate adaptation),
renewable energy on site,
renewable biomaterials

1-50
years

Short-term
thinking



200+
years

Long-term thinking



Resilience, securing business
environment and future generations,
adaptability, life-cycle assesment
(cradle-to-cradle)



Solution



Process



Shared circular and renewable
resources, AI and other technology
aided optimization, positive
impacts to wider place and
community



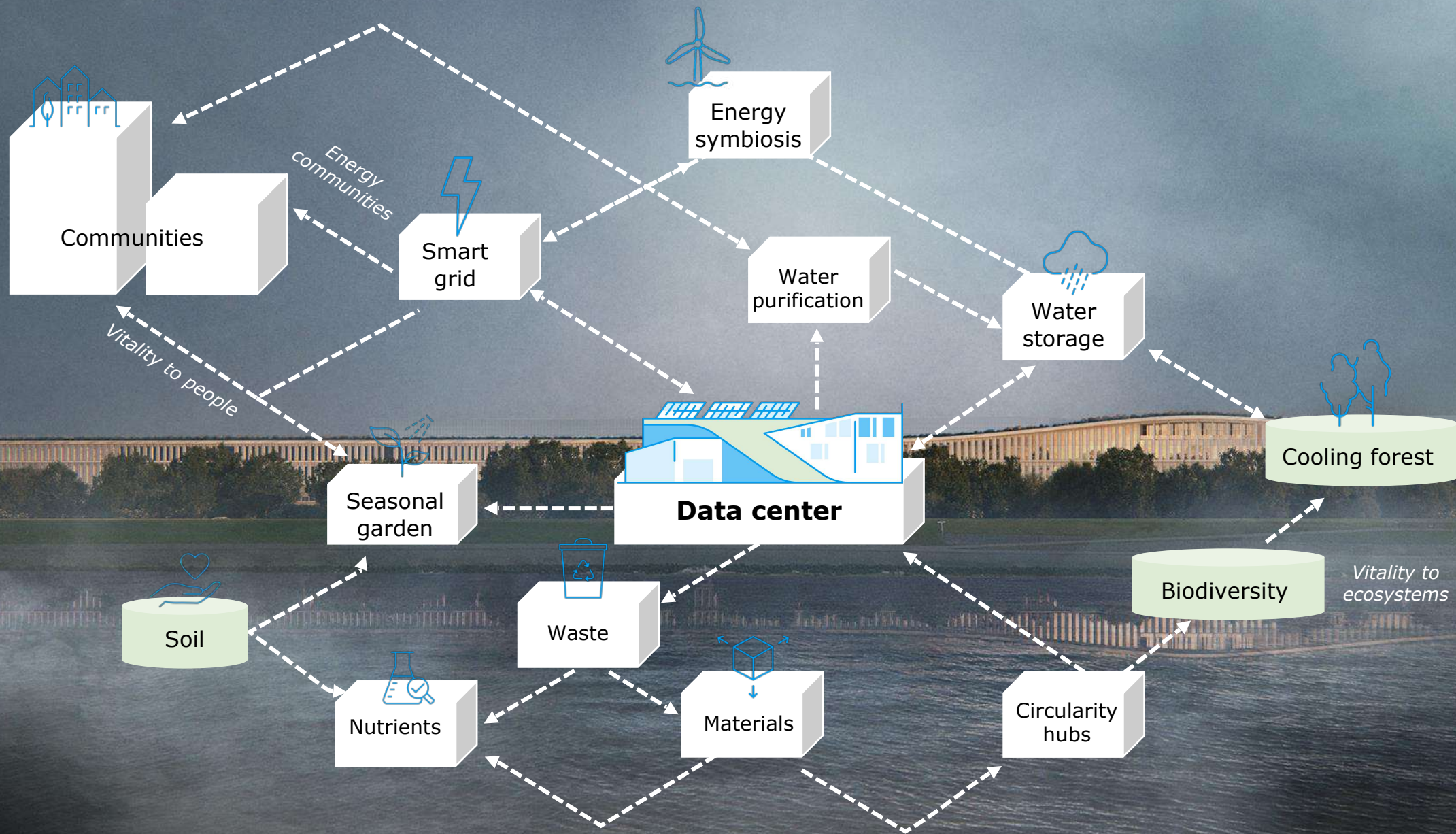
Minimizing harms



Creating positive impacts
and added value in nested
systems



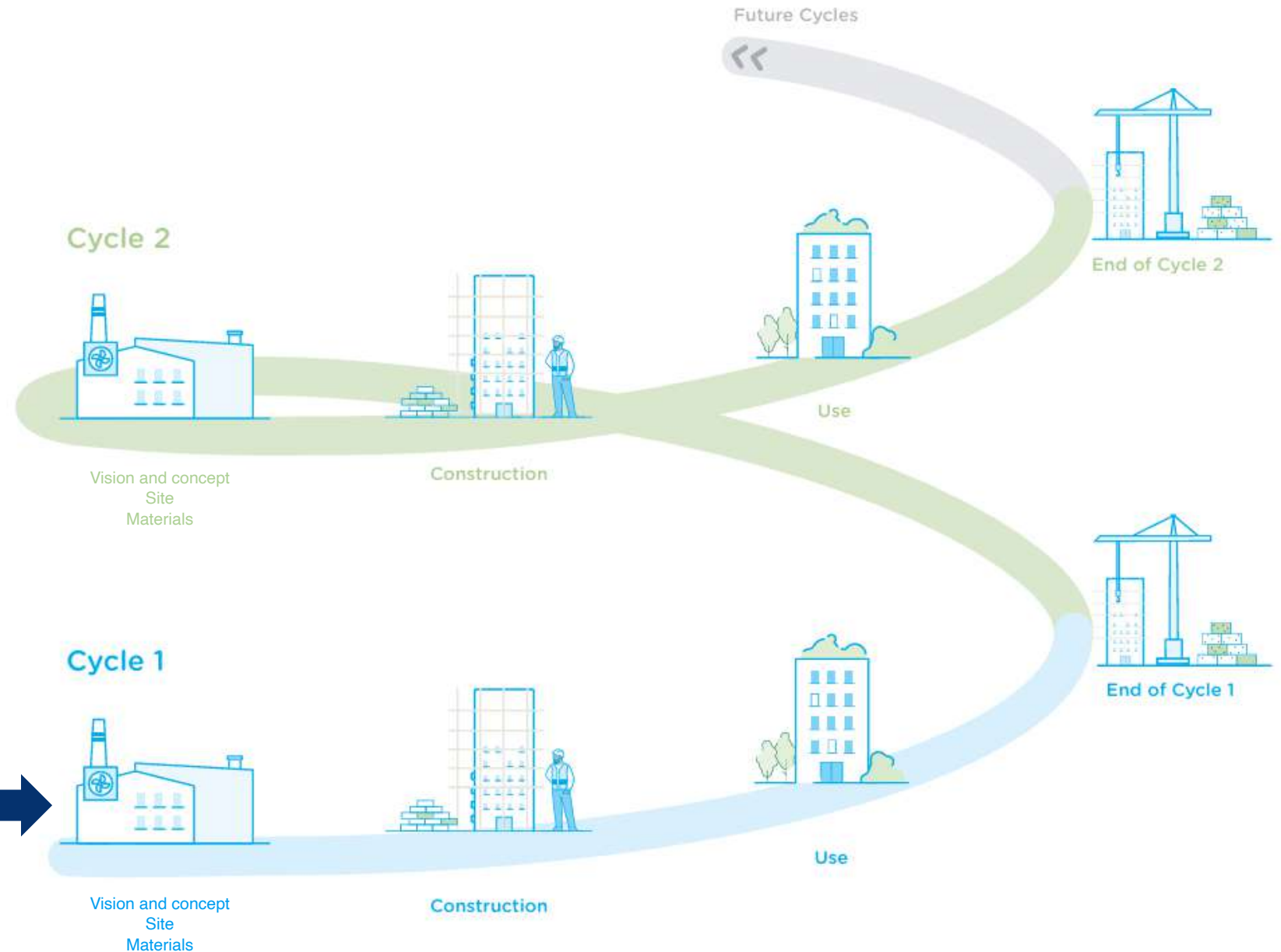
Creating benefits to the place and
community, finding synergies



Rethinking the process for bigger impacts and added value

Opportunity to influence **high**,
cost of changes **low**

**BUT NOTE: You will impact
the future cycles and
generations!**

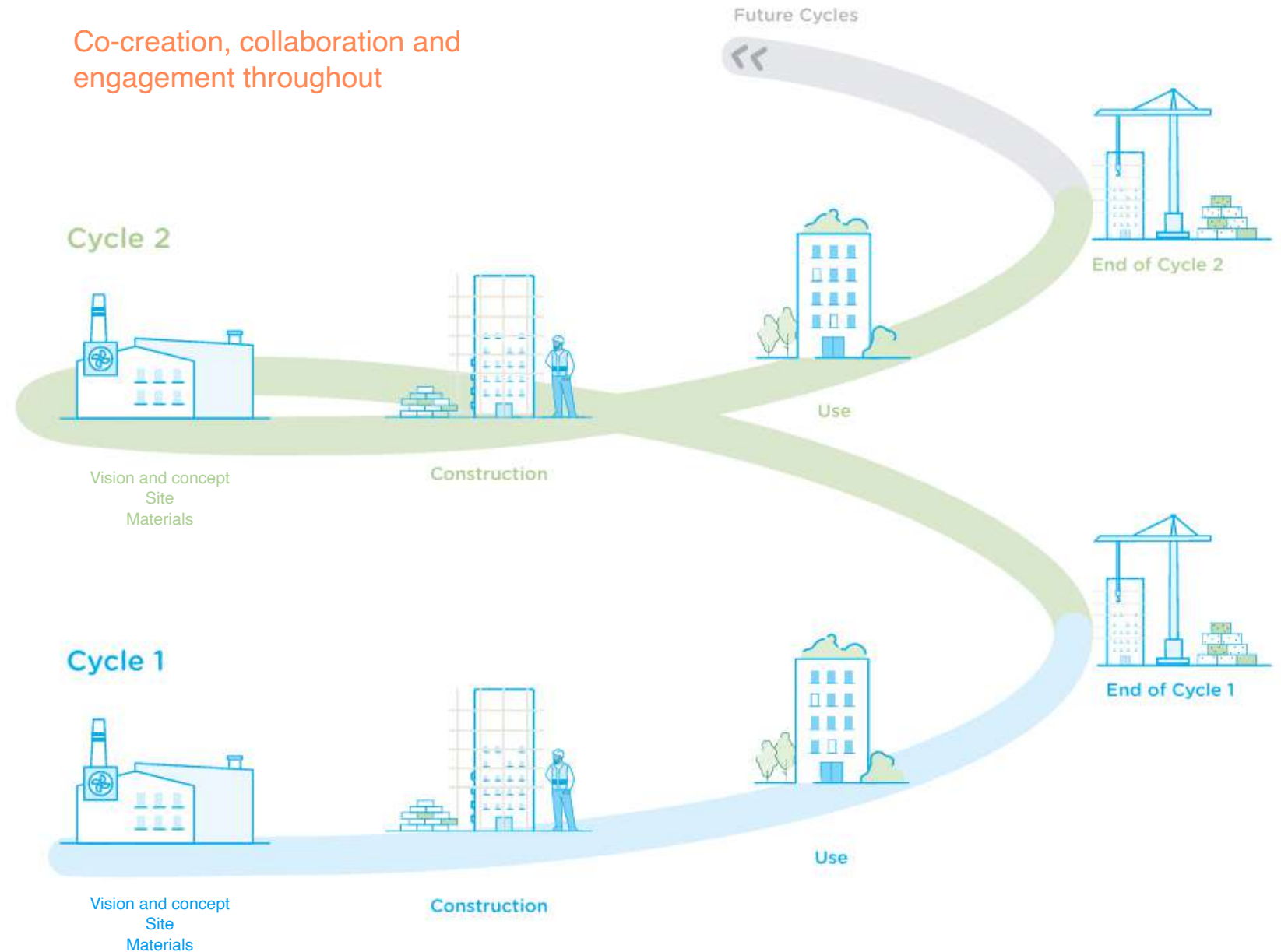


Rethinking the process for bigger impacts and added value

- System impact assessment
- Site selection:
From Degenerative sites to Regenerative
- System synergies and potentials (multi-optimization)
- Future-proofing with scenarios

Direct impact to

- Innovating new solutions
- Permits
- Zoning and land use planning
- Resources



The Value of Systems and Regenerative approach



**Multi-objective
solutions**

**Focus on the right
and most
impactful things
at the right time**

**Functioning
within Planetary
Boundaries**

**Attract investors
and financial
institutions**

**Extended life
cycle: maximise
value-creation**

**Nourishing
innovation**

**Synergistic
benefits**

Lead the Future we cannot yet see.



Thank you!



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Bright ideas.
Sustainable change.