

Building with nature

Unlocking the value of nature-based solutions
in the built environment

The business and economic case for
integrating natural processes into
how buildings and urban spaces are
designed, constructed and managed
across the value chain.

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Introduction

Nature underpins the global economy in ways that remain profoundly undervalued. Over half of the world's gross domestic product (GDP), about US\$58 trillion, is moderately or highly dependent on natural systems.¹

In 2023 alone, an estimated US\$7.3 trillion flowed into activities that directly harm it, from investments in utilities to fossil fuel subsidies.²

The buildings and construction sector sits at the centre of that imbalance. It carries the highest dependency on functioning natural systems of any industry, with more than US\$4 trillion of economic output reliant on those systems.³ Yet, at the same time, the built environment is among the largest drivers of natural systems decline, accounting for nearly 50% of all extracted material and impacting 29% of threatened and near-threatened species globally, eroding the foundations of the sector's own long-term viability.^{4,5}

As nature loss accelerates, the industry faces growing physical risks[□] from disrupted natural systems and exposure to climate hazards. Building and construction also faces business-related transition risks,[□] as regulation, disclosure and investor expectations

increasingly expose the sector's dependence on nature and its impacts across direct operations, procurement and supply chains.

Nature-based solutions (NbS), when applied to the built environment, integrate natural processes into how buildings and urban spaces are designed, constructed and managed, supporting the recovery of nature

while contributing to climate mitigation and adaptation, placemaking and improved human wellbeing.⁶

Key benefits of NbS include being able to address both physical and transition risk across the built environment value chain, as well as reducing exposure to nature-related risk, a company's own impact on nature, or both.

Examples of NbS that can be integrated into buildings and the wider built environment:⁷



Green infrastructure:
Green roofs, living walls, bioswales, permeable pavements



Ecosystem restoration:
Brownfield rewilding and green corridor reconnection



Ecosystem engineering:
Biophilic building envelopes, constructed wetlands and sustainable drainage systems (SuDS)



Ecosystem-based adaptation:
Urban green belts, canopy networks, coastal wetlands or dune restorations



Nature-based solutions integrate natural processes into how buildings and urban spaces are designed, constructed and managed, supporting the recovery of nature while contributing to climate mitigation and adaptation, placemaking and improved human wellbeing.

Nature-based solutions can help improve resilience, [enhance biodiversity](#) and deliver meaningful environmental, social and economic benefits by reducing heat; improving air quality; and slowing, storing, and cleaning run-off; among other benefits.

Businesses and policymakers can seize a significant opportunity by acting early as evidence shows that projects integrating NbS are better positioned to attract capital, protect asset value and deliver wider benefits to owners, users and communities.

A wide body of literature already sets out how to design, deliver and maintain NbS. What decision-makers are less aware of is the economic and business case, which is where implementation progress can often stall.

Clearly articulating that value is therefore critical. Visible evidence of delivery, scalability and tangible benefits drives adoption, normalises implementation and gives policymakers the confidence to raise regulatory ambition.

Accordingly, this paper focuses on the economic and business case for implementing NbS in the built environment. It is written for the multiple stakeholders across the built environment value chain, including asset owners, investors, developers, designers, architects, tenants, occupiers, governments and policymakers.

It is their collective decisions that determine whether these NbS move from being niche pilots and lighthouse projects, to becoming standard practice and business as usual, and that value is realised differently depending on where each stakeholder sits and the levers they hold.

Current landscape of nature-based solutions

Across finance, policy and industry there are positive signs of shifting trends around valuing natural systems and increased uptake of nature-based solutions across the building and construction sector.

However, the pace and scale remain nowhere near what is required to make NbS a central feature of value creation in the built environment, or to foster adequate nature restoration and regeneration.

Finance

Nature is entering mainstream financial decision-making and disclosure, but capital is not yet following.

Routing mainstream capital into nature-based solutions requires relevant financial infrastructure, standard reporting and economic incentives.

A key voluntary framework used by organisations worldwide to assess and disclose their nature-related risks and impacts is that provided by the [Taskforce on Nature-related Financial Disclosures](#) (TNFD). Its [LEAP Approach](#) [□] is designed to help organisations conduct the necessary due diligence required for disclosure statements aligned with the TNFD recommendations.

Meanwhile, the [International Sustainability Standards Board](#) (ISSB) is using the TNFD framework to create consistent global standards that will make reporting on nature impact standard practice everywhere.⁸

Progress

- More than 730 organisations, representing US\$22.4 trillion in assets under management, have committed to disclosing in line with the TNFD recommendations.¹⁰
- Some 77% of asset managers and owners are calling for a single global baseline for nature-related disclosure.¹¹
- In 2026 the ISSB plans to publish a draft for public consultation on disclosures of financial exposure to nature-related risks, drawing on the TNFD framework.¹²
- [Double materiality](#) [□], the principle that companies must report how sustainability issues will impact their financial performance as well as how they impact the environment and society, is increasingly embedded in corporate reporting frameworks.

Yet, despite these efforts, capital flows into NbS remain far below what is needed. In 2023, only US\$220 billion supported NbS – considerably lower than the estimated US\$571 billion required per year by 2030.⁹

Financing gap

- US\$7.3 trillion flowed into activities that damage natural systems in 2023. Meanwhile, global investment in NbS amounted to just US\$220 billion – a ratio of roughly 30 to 1.¹³
- Of that small proportion, just 0.3% of total NbS investment was allocated to urban infrastructure in 2020, despite urban areas concentrating many of the risks these solutions are designed to address.¹⁴
- The United Nations Environment Programme (UNEP) estimates that NbS investment must reach US\$571 billion by 2030 to meet global biodiversity, climate and land restoration targets.¹⁵

Policy

Policy momentum is growing, but implementation lags.

International recognition of the importance of nature-based solutions has grown significantly over the past decade, but national delivery remains uneven.

Progress

- The [Kunming–Montreal Global Biodiversity Framework](#), adopted by 196 governments in 2022, placed NbS at the centre of the 2030 biodiversity targets and codified the global goal of reversing nature loss through the [Nature Positive Initiative](#).¹⁵
- The formal adoption of the International Union for the Conservation of Nature (IUCN) definition of NbS at the UN Environment Assembly in the same year established a common foundation for policy.
- The [EU Nature Restoration Regulation](#) has since introduced the first legally binding restoration targets at regional scale.
- NbS were identified in around 50% of urban climate adaptation measures globally mapped between 2013 and 2023.¹⁶
- [Initiatives such as biodiversity net gain requirements](#) in England, Hong Kong's [Sponge City strategy](#) and Hamburg's [green roof mandate and subsidy](#) demonstrate nature integration moving from voluntary practice towards regulatory and policy expectation in the built environment.

Financing gap

- More than 1,500 NbS-related policies exist across over 190 countries and regions, but only 32% of nature-focused measures in national climate plans or nationally determined contributions (NDCs) have dedicated budgets.¹⁷
- Planning systems and building regulations largely remain orientated towards [grey infrastructure](#)¹⁸ ¹⁹.



Building and construction industry

Industry adoption of nature-based solutions is increasing, but remains uneven.

Awareness of nature-related issues is now widespread across the global real estate sector, but consistent action on tackling them has not yet followed.

Progress

- New NbS projects in Sub-Saharan Africa grew by an average of 15% each year between 2012 and 2021.¹⁹
- A review of 156 projects, identified in 2020, across Latin America and the Caribbean found the region moving from experimentation to wider NbS adoption across water, housing and urban infrastructure.²⁰
- Cross-sector initiatives such as the [Nature Positive Initiative](#) are building consensus on universal metrics for nature positive outcomes.²¹

Financing gap

- Awareness of biodiversity issues across the real estate sector is now widespread. More than 70% of real estate professionals globally identify biodiversity as important, yet only 31% integrate biodiversity across new and existing assets and over half do not assess the impact of their developments on nature.²²

A key barrier to the wider uptake of nature-based solutions is not a lack of technical options, but a lack of understanding of the value they create for different decision-makers.

We work with industry, finance and policymakers, through our network of [Green Building Councils](#) (GBCs), to accelerate the integration of NbS into buildings, communities and cities. We do this by convening stakeholders, advancing market frameworks and voluntary certification systems, building capacity and sharing practical guidance that broadens understanding and enables implementation at scale.



The value of nature in the built environment

Nature-based solutions deliver benefits across the built environment value chain, from the buildings themselves to the neighbourhoods and cities they sit within.



Building level



Neighbourhood level



City level

That value is realised differently depending on where each stakeholder sits and the decisions they control. Benefits for stakeholders include:

- **Asset owners and investors:** Protected long-term asset value and reduced exposure to physical and transition risk.
- **Developers:** Improved bankability and ability to command a stronger market position.
- **Designers and architects:** Delivery of higher performing buildings and stronger placemaking outcomes for their clients.
- **Tenants and occupiers:** Benefit from living and working in healthier, more resilient spaces, often with lower running costs.
- **Governments and policymakers:** Cost-effective, resilient infrastructure and stronger public health outcomes.

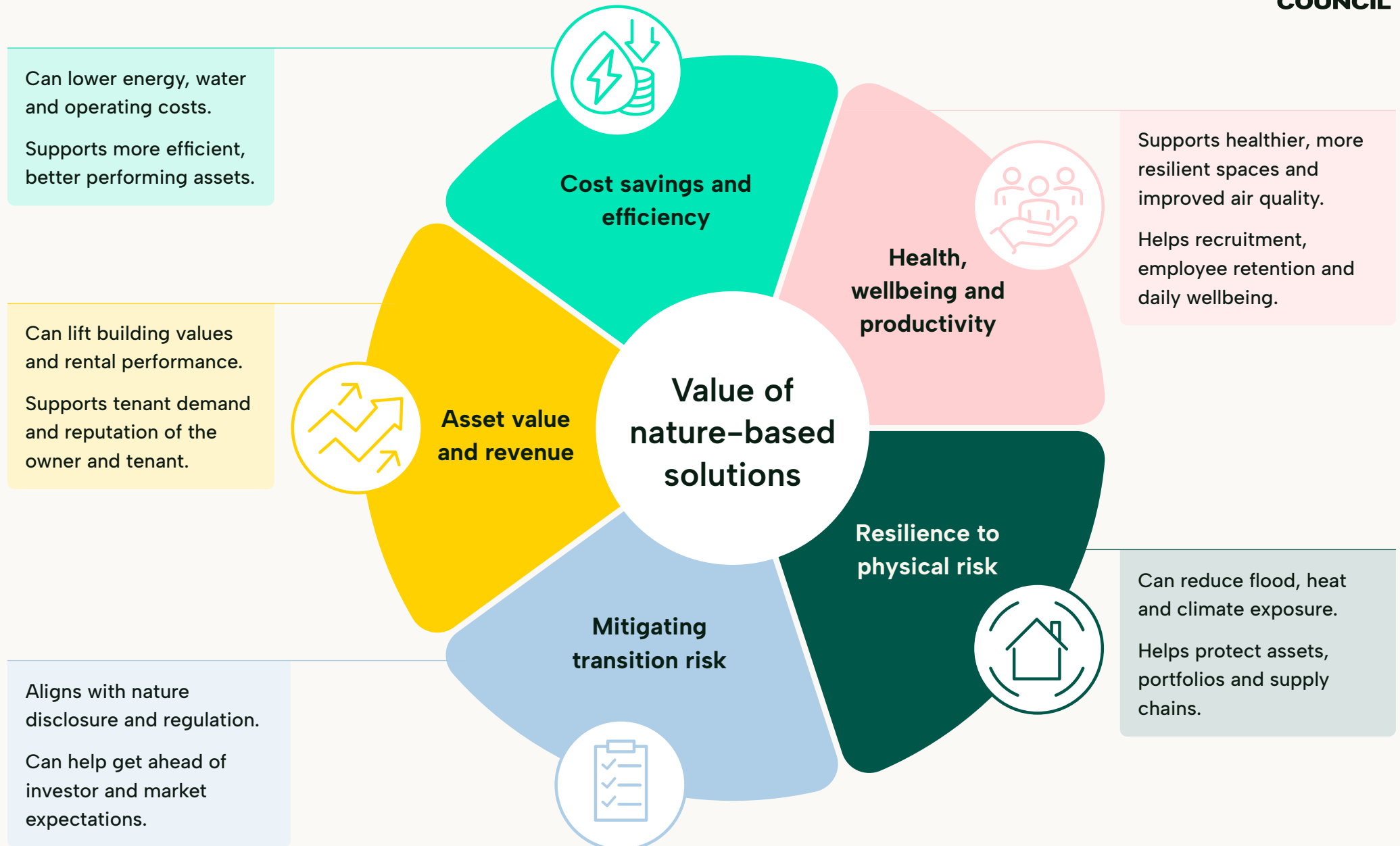
Equity and just transition considerations

While there are many benefits provided by nature-based solutions, they are not always distributed equitably.²³ Lower income communities are often the most exposed to the flooding, heat and air quality risks that NbS mitigate, yet the least likely to receive investment in them.²⁴

Where nature is introduced or restored, the resulting uplift in asset value and rents can, without deliberate intervention, deepen affordability pressures and concentrate the advantages of greener environments among those who already enjoy the greatest access to them, displacing the lower income residents and occupiers the projects were partly intended to benefit.²⁵

An equitable and just transition therefore requires NbS to be planned as both social and ecological infrastructure, through targeted investment in underserved areas, inclusive design, community stewardship and delivery paired with affordability measures.

Value of nature-based solutions





Value of nature-based solutions at building level

Enhanced asset value and revenue

Nature-based solutions can directly benefit asset owners, investors and developers by lifting asset value. Localised studies show green and [blue infrastructure](#),²⁶ that integrates natural water systems with vegetation, can raise building values by between 0.5% and 27%.^{26,27} An accessible green roof alone has been linked to uplifts of about 7% in certain markets, while also protecting the building from environmental stressors such as temperature fluctuations, extending roof lifespan.²⁸

Reputational and market benefits reinforce these gains. Investment in NbS strengthens brand position, while tenants and occupiers increasingly prioritise spaces aligned with their own sustainability commitments, supporting demand and rental performance.²⁹ For businesses occupying buildings, [regenerative design](#)³⁰ can strengthen recruitment, retention and client perception, translating design decisions into commercial advantage. For developers, the same shift can contribute to a project's wider bankability case.

These gains must be managed through deliberate equity measures to avoid reinforcing affordability pressures and uneven access to the benefits of greener buildings.

Cost savings, efficiency and resilience

Nature-based solutions can also reduce operating costs. Green roofs and green walls can moderate heat gain and heat loss as external temperatures rise and fall, cutting annual heating and cooling energy consumption by up to 20% in temperate climates.³⁰ Tenants and occupiers benefit from lower running costs, while owners and investors gain from more efficient assets that support stronger rental and resale performance.

Green roofs also improve rooftop solar PV efficiency by cooling the panel surface, as exemplified by [Swire Properties' integration of a green roof with solar panels in Hong Kong](#).^{31,32} An Australian study found that a green roof increased solar output by 3.6%, equating to nearly AU\$2,600 over eight months for an office building with a 594m² solar array.³³

Water performance follows a similar pattern. Green roofs can retain 62–73% of rainwater run-off, easing drainage load and reducing flood exposure in vulnerable catchments.³⁴ Beyond individual performance measures, a lifecycle study of 40 urban nature-based projects, including green roofs and urban green spaces, found them on average 42% less

expensive than grey alternatives, with 36% more value once avoided costs and co-benefits were included.³⁵ Realised savings, however, will depend on design, maintenance and operational conditions.

Health, wellbeing and productivity

People spend most of their time inside buildings, and the quality of those spaces has a measurable effect on health and performance.^{36,37} [Biophilic design](#),³⁸ the deliberate integration of nature into interior spaces, is consistently linked to lower anxiety, improved morale and fewer sick days.^{38, 39, 40} Improved thermal comfort from NbS can also deliver productivity gains of up to US\$3,000 per employee each year, meaning a direct return for occupiers and a marker of quality that owners and investors can translate into stronger tenant demand.^{41,42}

Workplace design has become a factor in recruitment as well. One-third of employees globally say office design would affect their decision to work for an organisation, strengthening the case for owners and developers to treat NbS as a core design decision rather than an optional extra.⁴³

Research centre with equivalent area of green spaces, Singapore



Marc Tan

Project: [Elementum](#) is a research and business park in Singapore that integrates architecture, landscape and public space, embedding nature across the site through green roofs, native planting and connected green corridors.

Location: Singapore

Scale: Building/site

Teams involved: Client: Ho Bee Land Limited, Design: Skidmore, Owings & Merrill (SOM), Architect of Record: DCA, Landscape Architect: Grant Associates

NbS applied: Native and biodiverse planting, green roofs, green walls and facades, sustainable drainage systems, green corridors and habitat connectivity.

Further information: Designed with 100% green replacement, the project rebuilds the equivalent of the site area as gardens or green walls, introduces nature at multiple levels of the development and directly connects to Singapore's Rail Corridor greenway, expanding the network of interconnected natural habitats across the city.

Value created:

Green Mark Platinum certification positions the asset at the highest tier of Singapore's green building standard.

Connection to nature, public gathering spaces and biophilic design enhance workplace quality and daily access to nature for occupants.

Exclusive use of native planting across all landscaped areas, at ground and building level, substantially reduces irrigation and maintenance requirements.

100% green area replacement, contributing to the site's biodiversity gain, positioning the asset ahead of emerging regulatory and market expectations around nature and biodiversity loss.

Large areas of permeable soil, vegetated swales and a 900m² green roof manage stormwater run-off and retain rainfall, reducing flood risk.

Key:

- Asset value and revenue
- Mitigating transition risk
- Cost savings and efficiency
- Health, wellbeing and productivity
- Resilience to physical risk

Wetland and habitat creation in mental health hospital, Ireland



Project: The National Forensic Mental Health Service Hospital is a public hospital and [forensic mental health campus](#). The campus sits adjacent to several [Natura 2000](#) protected areas.

Location: Portrane, Co Dublin, Ireland

Scale: Building/site

Teams involved: Walker Architects, landscape by Mitchell + Associates and ecological consultant Faith Wilson

NbS applied: Native and biodiverse planting, sustainable drainage systems, wetland restoration and creation, woodland and tree planting.

Value created:

A wetland was proposed in place of the originally specified underground attenuation tank, saving approximately €100,000 in capital costs while delivering sustainable surface water management and habitat creation.

Native planting with staggered flowering periods extends seasonal biodiversity value and forms a vegetated buffer between woodland and built areas. Views of planting and surrounding woodland support recovery outcomes linked to exposure to nature.

The planting of more than 15,000 native trees expanded managed woodland and strengthened ecological resilience and connectivity with adjacent protected areas.

Key:

- Asset value and revenue
- Cost savings and efficiency
- Resilience to physical risk
- Mitigating transition risk
- Health, wellbeing and productivity

Value of nature-based solutions at site, neighbourhood and portfolio level

Enhanced local revenue and neighbourhood value

Local businesses can benefit from nature-based solutions in the built environment too. Street and neighbourhood tree coverage has been shown to increase restaurant patronage and lift consumer spending in nearby shops.⁴⁴ Property values often rise as well, as seen in Atlanta where homes within 800m of the Beltline, a 35km greenway of parks and trails, saw increases of 18 to 27%.⁴⁵

These gains extend across whole areas rather than sitting with individual buildings. That broadens the opportunity for asset owners, developers and local businesses, but can also push up prices for residents and smaller occupiers. Coordinated NbS investment by policymakers and developers, alongside mechanisms to distribute benefits equitably, is therefore essential.

Improved resilience across multiple risks

At this scale, nature-based solutions can act as critical infrastructure for managing compounding physical risks. Urban trees can reduce the air-conditioning costs of buildings by 20–50%.⁴⁶ In Miami, dense tree cover cut cooling costs by 61%.⁴⁷ Sustainable Drainage Systems (SuDS), including green roofs deployed at scale, can reduce stormwater run-off across whole neighbourhoods, easing drainage pressure and lowering flood risk, while delivering capital and operating savings compared with grey infrastructure.^{48,49}

For investors and asset owners, this resilience is increasingly evident at the portfolio level. Concentrated exposure to flooding, overheating and infrastructure failure is one of the fastest growing sources of risk in real estate, and insurers are already repricing or withdrawing cover in the most exposed markets.⁵⁰ NbS embedded across a portfolio can reduce aggregate physical risk, mitigate insurance premium increases and protect long-term asset value, while strengthening alignment with nature-related disclosure and investor expectations.^{51,52}

Mitigate transition risks

Biodiversity net gain requirements, TNFD-aligned disclosure and rising investor expectations mean organisations across the built environment face increasing scrutiny of their impacts on nature. For asset owners, investors and developers, that scrutiny is fast becoming a source of significant risk.

Nature-based solutions provide a practical way to address impacts identified through double materiality  assessment, helping owners protect long-term value, investors meet disclosure and stewardship obligations, and developers safeguard project bankability.⁵³

The same shift creates opportunity. Articulating nature-related risks and opportunities in line with frameworks such as the TNFD strengthens the investment case for NbS projects. Sustainable finance taxonomies increasingly incorporate resilience and biodiversity, and many countries already require resilience assessments for building permits, positioning NbS as a credible, investable route to meeting emerging compliance requirements while strengthening risk-adjusted returns.

Redevelopment with connected network of green spaces, Hong Kong

Project: [Taikoo Square and Taikoo Garden](#)

Location: Hong Kong

Scale: Neighbourhood (70,000 sq ft)

Teams involved: Swire Properties and landscape architect Kathryn Gustafson

NbS applied: Native and biodiverse planting, green corridors and habitat connectivity, parks and urban forest.

Further information: [Taikoo Square and Taikoo Garden](#) form a central part of the Taikoo Place redevelopment in Hong Kong, using NbS and biophilic design to transform a previously developed site into a connected network of green open space, increasing total greenery and open space to around 30%. More than 260 native and exotic plant species were planted to mimic natural ecosystems and enhance ecological value for local wildlife, while embedding biodiversity, microclimate regulation and community use within a dense commercial district.



Value created:

Increased footfall and business activity within the district, with spaces used beyond working hours, including at weekends.

Key:

- Asset value and revenue
- Cost savings and efficiency
- Resilience to physical risk
- Mitigating transition risk
- Health, wellbeing and productivity

Integration of NbS underpins the award of the LEED Communities Platinum certification, supporting long-term asset value, improving the overall quality of the portfolio and tenant experience, positioning the district as sustainability led and reinforcing its appeal to occupiers that increasingly prioritise environmental, social and governance credentials.

Climate modelling indicates the landscape contributes to an additional 26.7% of thermally comfortable outdoor areas across the district, improving the air quality and mitigating the urban heat island effect.

Landscaped areas absorb rainwater during intense rainfall events, reducing surface run-off and lowering urban flood risk.

Site level biodiversity assessment, ongoing ecological monitoring and TNFD aligned disclosure provide a credible corporate response to impacts on nature, reducing exposure to future biodiversity regulation and nature-related reporting requirements.

Urban microforest offering long-term climate resilience, Singapore

Project: [CDL MicroForest](#)

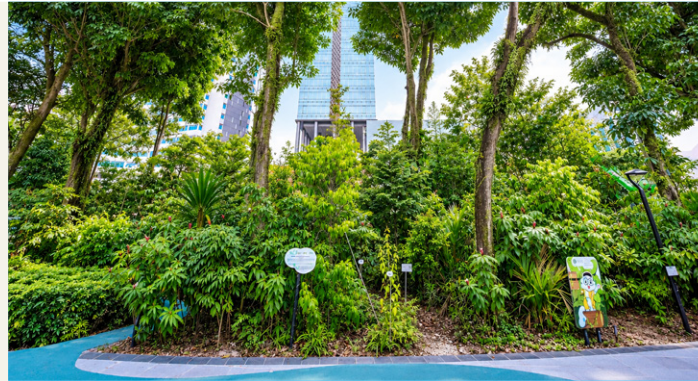
Location: Singapore

Scale: Neighbourhood

Teams involved: City Developments Limited (CDL), National University of Singapore

NbS applied: Native and biodiverse planting, parks and urban forest.

Further information: The [CDL MicroForest](#) is Singapore's first research driven regenerative tropical microforest. Located next to the City Square Mall, its dense, multi-layered native planting restores ecological function and delivers urban cooling in a high-density commercial setting. City Developments Limited framed it internally as a long-term investment in climate resilience and operational efficiency, linking urban cooling and stormwater management to potential benefits for supporting biodiversity, improving tenant and shopper experience, and long-term asset resilience. Strong first year data led to the site doubling to 520m² in March 2026.



Value created

Continuous monitoring over one year shows the CDL MicroForest is up to 5°C cooler than surrounding roadside areas during peak heat, with temperature reductions of 1–4°C extending one to two metres beyond its edge, reducing heat exposure, supporting biodiversity and contributing to stormwater management through increased vegetation and permeable green space.

The regenerative planting model is estimated to potentially deliver about S\$10,000 (~ US\$7,750) per month in long-term maintenance cost savings for the 260m² site once established, compared to conventional manicured landscaping, due to reduced irrigation, pruning and replanting needs.

City Square Mall has reported an estimated 15–20% increase in footfall compared to pre-2025 levels following its Asset Enhancement Initiative and introduction of sustainability features including the CDL MicroForest, with improved thermal comfort along the main pedestrian approach, encouraging more direct access to the mall and longer dwell time.

The CDL MicroForest was expanded from 260m² to 520m² within its first year, reflecting confidence in early performance data and willingness to allocate additional capital towards scaling NbS within a commercial asset.

Alignment with the Singapore Government's City in Nature framework and 2026 Year of Climate Adaptation, alongside early adoption of emerging nature-related disclosure frameworks, positions the development ahead of national regulatory direction on urban heat resilience and biodiversity integration.

Key:

- Asset value and revenue
- Cost savings and efficiency
- Resilience to physical risk
- Mitigating transition risk
- Health, wellbeing and productivity



Value of nature-based solutions at city and urban level

Urban resilience and physical risk reduction

Cities are increasingly exposed to physical climate risk. Recent analysis suggests that more than half of the world's urban GDP, around US\$29.3 trillion, is concentrated in markets facing the highest levels of climate exposure.⁵⁴ By 2050, around 970 cities and 1.6 billion people are expected to face frequent extreme heatwaves, a trend already visible in the 25% rise in days over 35°C across the world's major cities since the 1990s.^{55,56}

Nature-based solutions can help reduce those pressures. City-wide approaches can cut stormwater run-off by 30–75%, lowering flood damage and easing pressure on drainage networks.⁵⁷ They can also reduce daytime temperatures by an average of 2°C, avoiding heat-related productivity losses and cutting cooling costs.⁵⁸

Embedded in and around cities, NbS can help protect facilities, workforces and supply chains from the shocks that threaten operations.⁵⁹ Insurers are moving in the same direction, with modelling beginning to quantify how nature-based mitigation can lower risk exposure and reduce premiums over time.⁶⁰

Together, these developments position urban nature as core resilience infrastructure at the city scale, reducing physical risk and safeguarding the assets, systems and services on which entire city economies depend.

Economic benefits, avoided public costs, and competitiveness

The resilience case can translate directly into economic value. Insurance losses from natural disasters have risen by 5–7% each year, reaching US\$137 billion in 2024. Urban flooding is projected to cost US\$64 billion annually by 2050, and extreme heat could cause US\$2 trillion in labour productivity losses by 2030.^{61,62,63}

Nature-based solutions can offer a cost-effective response. Urban trees in ten of the world's megacities are estimated to save around US\$482 million per year in health costs through reduced air pollution alone, while each hectare of urban green space has been estimated to deliver between US\$3,000 and US\$18,000 annually in carbon storage, stormwater management and pollution removal.^{64,65}

Returns can also be substantial. Analysis of New York's blue-green infrastructure network found that every US\$1 invested generated US\$2 in return, while every US\$1 million invested

in nature-focused activities in developing countries has been estimated to create up to 750 full-time jobs.^{66,67}

Cities that invest in nature can therefore be better positioned to attract investment, activity and talent, while remaining more resilient to climate impacts and avoiding significant public costs.

Health, wellbeing and equity

Nature-based solutions can contribute to improved public health outcomes through cleaner air, reduced impact of noise pollution, lower ambient temperatures and better access to green space. A green roof can reduce noise by up to 11 decibels, and green facades have been shown to lower surrounding air temperatures by 1 to 3°C.⁶⁸ Access to nature has also been linked to improved public mental health outcomes, which can ease pressure on healthcare systems and improve workforce wellbeing for local employers.⁶⁹

However, these benefits can often be distributed unevenly. Access to green space is heavily influenced by socioeconomic status. Targeted investment, guided by inclusive planning, can help close such gaps and extend the benefits of nature to those currently excluded from them.

Assessing the value of nature-based solutions, Denmark

Project: [Assessing the full value of NbS](#)

Location: Aarhus, Denmark

Scale: City

Teams involved: Ramboll, Aarhus Vand

NbS applied: Sustainable drainage systems, native and biodiverse planting.

Further information: This project worked to assess the full value of nature-based solutions, focusing on urban stormwater management. Applied at three locations within Aarhus, Åbyhøj, Fredensvang and Vesterbro Torv, the project quantified and monetised co-benefits, revealing the full value of NbS.



Key:

- Asset value and revenue
- Cost savings and efficiency
- Resilience to physical risk
- Mitigating transition risk
- Health, wellbeing and productivity

Value created:

At Fredensvang, three scenarios were compared: pipe-based drainage solution, fully nature-based and hybrid. The analysis showed that NbS deliver four times the socioeconomic benefits of the hybrid approach, while the pipe-based solution delivered close to none.



Modest climate adaptation investments in Vesterbro Torv led to a calculated annual socioeconomic value of at least 7 million DKK (~US\$1 million) in co-benefits, with a return of approximately 1.5 DKK (~US\$0.23) for every 1 DKK (~US\$0.16) invested.



In Åbyhøj, green streets and an urban park deliver a calculated socioeconomic value of at least 5.3 million DKK (~US\$825,000) per year, with further blue-green measures implemented since.



The central square in Vesterbro Torv is designed to retain up to 330,000 litres of rainwater on the surface during cloudburst events, equivalent to three simultaneous cloudbursts, reducing flood risk across a vast area.⁷⁰



Urban park supporting climate adaptation, Brazil

Project: Parque Madureira

Location: Rio de Janeiro, Brazil

Scale: Neighbourhood / City

Teams involved: Sustentech, City of Rio de Janeiro (Prefeitura da Cidade do Rio de Janeiro), Ruy Rezende Arquitetura (RRA), Delta, Dimensional Engenharia

NbS applied: Native and biodiverse planting, parks and urban forest, sustainable drainage systems, rainwater harvesting, green corridors and habitat connectivity.

Further information: The park serves as a form of climate adaptation in one of Rio de Janeiro's most densely populated and thermally stressed regions. Located in the city's "heat pole", the area faced extreme urban heat island effects and lacked permeable surfaces, leading to frequent localised flooding.



Value created:

More than 1,200 trees and 30,000m² of permeable surfaces contributed to a recorded reduction in local ambient temperatures of up to 5°C compared with the surrounding heat stressed area, improving outdoor thermal comfort and helping reduce cooling demand in nearby buildings.

Key:

- Asset value and revenue
- Cost savings and efficiency
- Resilience to physical risk
- Mitigating transition risk
- Health, wellbeing and productivity

Sustainable drainage systems and rainwater harvesting were designed to manage 100% of stormwater run-off and meet 100% of irrigation and cleaning needs, reducing potable water costs by 30% and lowering public spending on flood-related infrastructure repairs.

The transformation into a high-quality public green corridor has supported regional economic revitalisation and created a safer, more attractive civic space with high daily footfall, with over 200,000 residents and 20,000–25,000 visitors recorded on weekends.

The project's success positions it as a replicable model for climate-responsive public infrastructure in tropical cities.

Early technical mediation between the City of Rio, landscape architects and utility providers enabled dense vegetation and water retention landscapes to be safely integrated beneath high voltage power lines, with controlled growth species selection and vegetation management addressing safety concerns while maximising shade, soil stability and public value.^{71,72}

Accelerating action across the sector

The built environment depends on natural systems more than any other sector, yet it remains among the largest drivers of nature's decline.

Nature-based solutions offer one of the clearest ways to help rebalance that relationship, protecting asset value, reducing physical and transition risk and unlocking long-term returns. Moving them from being niche pilots, to standard practice and business as usual is therefore central to protecting the long-term value of the sector itself.

Factors that will determine the pace of shift

- **Continued evidence of value** remains key, generated through implementation itself and made visible to investment, design, planning and procurement decision-makers, who still need clearer demonstration of return, risk reduction and replicability, before treating NbS as core rather than discretionary expenditure.
- **Coordinated action across stakeholders and the decisions that shape the built environment**, from investment and planning through to design, procurement, delivery and long-term management, recognising that NbS rarely sit within the control of a single

actor and that their value multiplies when these decisions are aligned, and stalls when they are not.

- **Addressing and removing barriers** that continue to constrain uptake, including the absence of standardised metrics for measuring the value of NbS and appraisal models that value long-term and non-market outcomes; limited access to finance at scale; planning and regulatory systems still orientated towards grey infrastructure; and uneven delivery capacity, skills and expertise across the value chain. Overcoming them will require the public and private sectors to act in ways that are mutually reinforcing.

Responsible actors across the value chain

Industry and finance carry the primary responsibility for normalising delivery, by treating nature as part of core business, risk and asset strategy rather than as an additional sustainability feature. Different actors hold distinct levers:

- **Asset owners and investors** should integrate NbS into investment criteria, due diligence, stewardship and portfolio level risk management, reflecting their role in

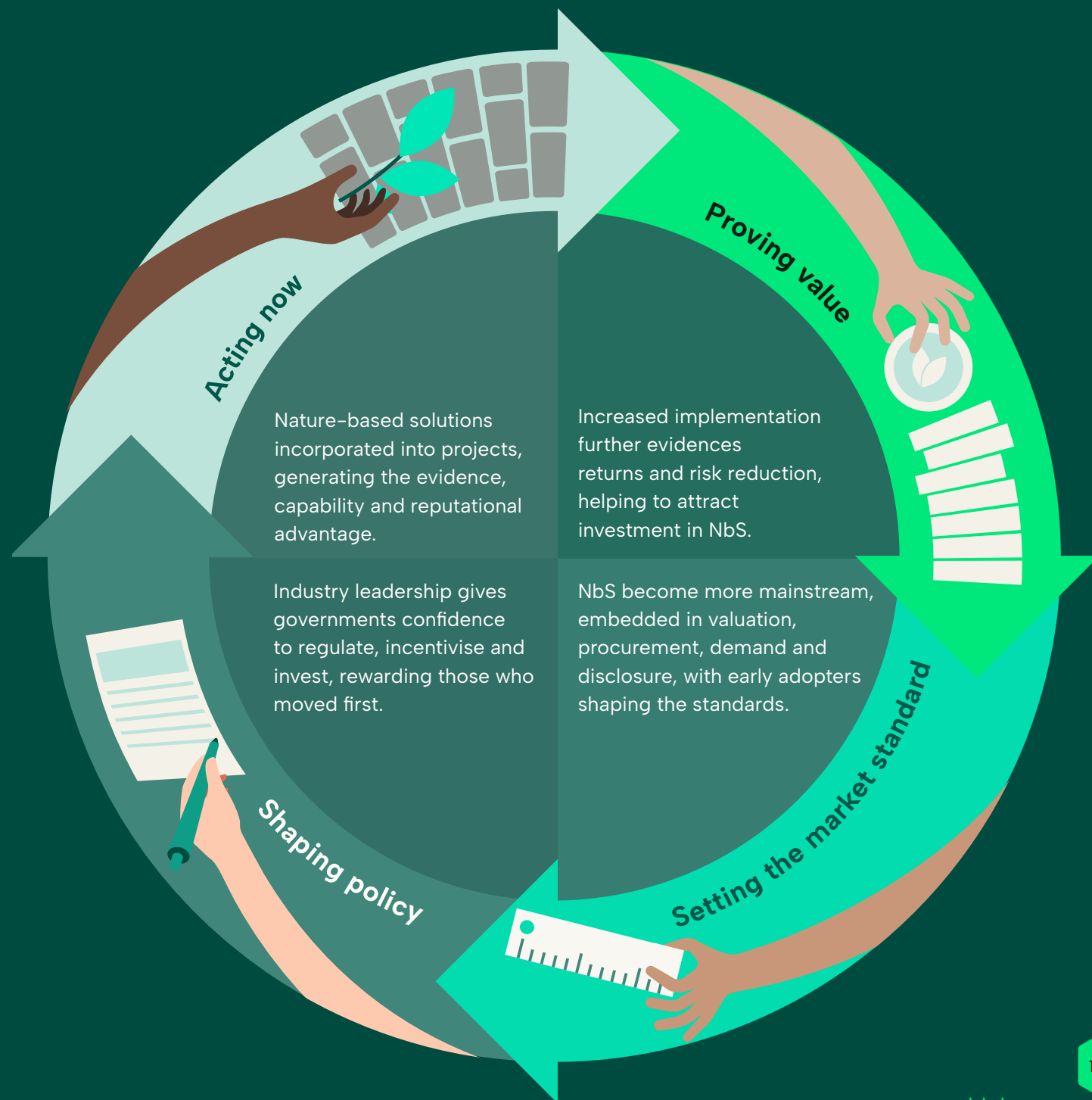
protecting long-term value and reducing exposure to physical and transition risk.

- **Developers** should embed NbS from project feasibility through to design briefs, procurement and delivery, so that outcomes align with national environmental goals and local biodiversity strategies.
- **Designers and architects** should design with natural systems from the outset, applying recognised guidance and supporting shared metrics and methods that enable value and outcomes to be understood consistently.
- **Insurers and reinsurers** should price the risk reduction benefits of NbS into premiums, reflect these in the risk models behind those decisions, and develop products that unlock investment in such approaches.⁷³
- **Tenants and occupiers** should use their position as end users to signal demand for buildings and places that work with natural systems, helping make NbS standard features of the built environment.

Governments and policymakers carry the primary responsibility for creating the conditions in which delivery becomes possible at scale. This means:

- Embedding nature-based solutions into planning, building regulations, public procurement and infrastructure strategies.
- Supporting early-stage investment and blended finance.
- Providing incentives that reward outcomes that support nature.
- Aligning disclosure, taxonomy and reporting frameworks with the value of natural systems.
- Public authorities are also major clients, landowners and infrastructure operators, with direct opportunities to demonstrate implementation.

Neither set of actors can mainstream NbS alone. A stronger economic and business case normalises delivery as proven and replicable, and normalisation gives policymakers the confidence to regulate, incentivise and invest. Stronger policy in turn clarifies market signals, unlocks finance and accelerates further implementation. This reinforcing ambition loop only turns when coordinated action across stakeholders and scales is in place.



Driving collective action to mainstream implementation

WorldGBC and our network of Green Building Councils call on industry, finance and government to act together to mainstream nature-based solutions implementation across the built environment, grounded in ecological integrity and equitable outcomes.

Through our network of over 80 GBCs and more than 50,000 members, we will continue to support the sector to deliver impact through certification, training, resources and guidance, and convene the dialogue between business and policymakers that turns ambition into action.

A growing body of guidance from Green Building Councils is emerging to support nature in the built environment:

- [Chile Green Building Council's Guide to Water and Biodiversity Management in Sustainable and Resilient Building and Infrastructure Projects](#) explores the main guidelines for NbS and water efficiency strategies. (Spanish)
- [Chile Green Building Council's Pocket Guides on Biophilia](#) and [Nature-based Solutions](#) explore the key principles and benefits of biophilic design and NbS. (Spanish)
- The [Green Building Council of Australia's Nature Positive Roadmap](#) sets out a clear pathway, with targets and timeframes for the built environment to protect, restore and regenerate nature. Their Green Star Buildings v1.1 certification introduces a Nature Positive Pathway that requires projects pursuing a 5- or 6-Star rating to demonstrate a 10% net gain in biodiversity from 2028, and all rated projects must report nature-related metrics aligned with the TNFD's draft guidance.
- The [Green Building Council España's \(GBCe\) country report Nature and biodiversity in the Built Environment](#) explores the range of impacts the industry has on nature, while also proposing frameworks for action and solutions.
- [Hong Kong Green Building Council's Climate Change Framework for Built Environment](#) features a dedicated section on biodiversity and NbS, discussing the interlink between climate and nature, and how NbS can reduce biodiversity loss and carbon emissions.
- [The UK Green Building Council's \(UKGBC\) work on the value of urban nature-based solutions](#) makes a compelling case for implementing NbS into the built environment. The report proposes a value framework, explaining how to recognise and capture the true value of NbS.
- The UKGBC's [Framework for a Nature-Positive Built Environment](#) translates the global ambition of halting and reversing nature loss into practical and applicable action.
- The [US Green Building Council's publication Real Estate and Biodiversity: What You Need to Know](#) explores what the built environment needs to address in order to protect, enhance and restore biodiversity.

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Institutional Investors Group on Climate Change (IIGCC)

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Malaysia Green Building Council

Peru Green Building Council

Serbia Green Building Council

SUMe (Sustentabilidad para Mexico)

Tanzania Green Building Council

Tunisia Green Building Council

UK Green Building Council

Ukraine Green Building Council



Glossary

Biophilic / biophilic design:

An approach or a design that relates to creating buildings, streets and public spaces that strengthen people's connection with nature, improving wellbeing, biodiversity and environmental resilience.

Blue and green infrastructure:

A planned network of natural and semi-natural areas with other environmental features, designed and managed to deliver a wide range of ecosystem services such as water purification or improved air quality while also enhancing biodiversity. (European Commission)⁷⁴

Climate resilience:

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management. (UN Office for Disaster Risk Reduction)⁷⁵

Double materiality:

How sustainability issues may generate financial risks for a company (financial materiality), and the company's own impact on the environment and people (impact materiality). (Corporate Sustainability Reporting Directive)⁷⁶

Grey infrastructure:

Engineered assets that provide one or multiple services required by society, such as transportation or wastewater treatment. (International Institute for Sustainable Development)⁷⁷

LEAP Approach:

An integrated approach for the identification and assessment of nature-related issues developed by the TNFD. This approach aims to help organisations conduct the due diligence necessary to inform disclosure statements aligned with the TNFD recommendations, but it is also useful for other organisations looking to identify and assess their nature-related issues, regardless of their formal disclosure requirements. (Taskforce on Nature-related Financial Disclosures)⁷⁸

Nature positive:

Nature positive is defined as 'halt and reverse nature loss by 2030 on a 2020 baseline, and achieve full recovery by 2050', in line with the mission of the Kunming–Montreal Global Biodiversity Framework. It means ensuring more nature in the world in 2030 than in 2020 and continued recovery after that. (Nature Positive Initiative)⁷⁹

Physical risk:

The potential for physical damage and financial losses because of increased exposure to climate hazards. (UKGBC)⁸⁰

Regenerative design:

An approach in which human and natural systems are designed to co-exist and co-evolve over time. The value is its potential to regenerate planetary health and deliver positive outcomes for both people and planet. (Arup)⁸¹

Transition risk:

Business-related risks that follow societal and economic shifts toward a low-carbon and more climate-friendly future. These risks can include policy and regulatory risks, technological risks, market risks, reputational risks, and legal risks. These risks are interconnected and high in consideration for investors as they navigate an increasingly low-carbon agenda. (GRESB)⁸²

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About the World Green Building Council

At WorldGBC our role is to help property and construction markets around the planet reach tipping points and by 2050 achieve:

- **total decarbonisation of the built environment**
- **healthy, equitable and resilient buildings, cities and communities**
- **regeneration of natural systems and a thriving circular economy**

That means building the right policy environments, the right financing environments and the right social and cultural environments to deliver sustainable built environments.

As the largest local-regional-global action network leading the transformation to resilient and decarbonised buildings, cities and communities, we are driving systemic changes together with over 80 Green Building Councils (GBCs) and industry partners from all around the world.

We work with businesses, organisations and governments to deliver on the ambitions of the Paris Agreement.

This position paper complements WorldGBC's Building the Transition programme — our flagship global programme to deliver our [Strategic Plan 2025–2027](#). This programme sees WorldGBC continue to scale solutions with the GBCs by matching global ambition with local impact.