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**Global Alliances as a Condition for Sustainable
Development: Sustainable Construction**

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How do business and financial markets respond to SDG agenda

Estimated investment gap in key SDG sectors – **2,5 trillions out of 4 trillions, USD, annual by 2030**

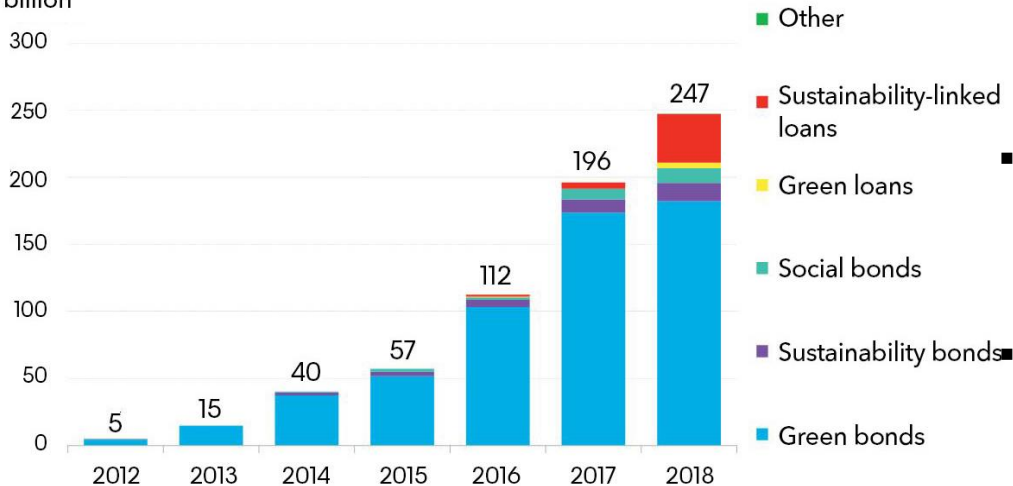


- From **60% to 80%** of companies (global surveys) stated that they **either mapping or currently integrating the SDGs** into business strategy
- For **79%** of companies corporate sustainability strategy directly impacts **supply chain and procurement**
- Nuclear industry players are supporting SDGs**
- Sustainable finance is one of the fastest growing segments** in financial markets, with double digit figures in CAGR
- Nearly **50%** of investors won't invest in a company with a record of poor sustainability performance
- Some **60%** of investment firm board members are willing to divest from companies with a poor sustainability footprint



Global sustainable debt annual issuance. 2012-2018

\$ billion



Sustainable construction include not only green buildings, but design & construction processes also

Progress Innovation and transferability	Planet Resource and environmental performance	People Ethical standards and social inclusion	Prosperity Economic viability and compatibility	Place Contextual and aesthetic impact
<ul style="list-style-type: none"> • Innovative concepts in design, integration of materials and methods • Outstanding contributions to construction technologies and building processes, operation and maintenance • Advancements in the disciplines of architecture, urban and landscape design, civil, urban and environmental engineering • Long-term monitoring methods • Dissemination of knowledge 	<ul style="list-style-type: none"> • Minimizing project's ecological footprint and maximizing its positive impact on the environment • Environmentally-conscious land use strategies • Use of renewable energy in construction, reduction of CO₂, avoid toxicity • Innovative deployment of material resources in construction, circular economy, waste reduction • Resilient products, robust construction details, smart interaction of building systems and environmentally sound technologies 	<ul style="list-style-type: none"> • Ethical standards in all phases of the project • Formation of socially-viable environments, empowerment of communities • Participation of all types of stakeholders • Quality of working conditions in the construction industry (incl. fair compensation, adequate benefits, safety and gender equality) • Political transparency, anti-corruption at every level 	<ul style="list-style-type: none"> • Legitimate and transparent financial flows • Cover operating costs over the project lifetime and generate an acceptable rate of return • Integration of the project into the wider economic framework of local, regional, and global monetary flows • Demonstrate flexibility to adapt to future changes of user needs, ownership, laws, regulations, and economic fluctuations • Robust economic models 	<ul style="list-style-type: none"> • Improvement of existing contextual conditions • Interdependencies of landscape, infrastructure, urban fabric and architecture • Working with the given building stock through sensitive restoration • Architectural quality and aesthetic impact

Which elements can be implemented for NPP construction

	Innovation & transferability	Resource & environmental performance	Ethical standards & social inclusion	Economic viability & compatibility	Contextual & aesthetic impact
Design	<ul style="list-style-type: none"> Core elements – modular approach Supporting infrastructure – validate design via green* BIM 	<ul style="list-style-type: none"> Use opportunities for sustainable design and materials 	<ul style="list-style-type: none"> Stakeholders, including local communities are engaged at the design stage 	<ul style="list-style-type: none"> Use opportunities for resources efficiency and time costs reduction 	<ul style="list-style-type: none"> Use opportunities for fitting local context in design
Construction	<ul style="list-style-type: none"> Advanced construction technologies & building processes Reduction of CO₂ & energy 	<ul style="list-style-type: none"> Sustainable sourcing and transparency of supply chain Reuse and recycling of waste (when applicable) 	<ul style="list-style-type: none"> Local staff & suppliers Cross-cultural communication standards Day-by-day public acceptance 	<ul style="list-style-type: none"> Sources of sustainable finance BIM data collection & processes optimization 	-
Operation & maintenance	<ul style="list-style-type: none"> Long-term monitoring methods Dissemination of knowledge 	<ul style="list-style-type: none"> BIM data collection & processes optimization Resources & waste management 	<ul style="list-style-type: none"> Education for local community Local suppliers of spare parts 	<ul style="list-style-type: none"> BIM data collection & processes optimization 	-
Decommissioning	<ul style="list-style-type: none"> Consider sustainability requirements for decommissioning Resources efficient technologies 	<ul style="list-style-type: none"> Environmental impact assessment Reuse and recycling of waste (when applicable) 	<ul style="list-style-type: none"> Conversion training for staff 	<ul style="list-style-type: none"> Consider risks and costs of decommissioning process 	<ul style="list-style-type: none"> Fitting local needs & requirements

*) sustainability & energy efficiency

Bechtel sustainability services

Resource efficiency and optimization

- the best design alternatives to optimize energy and water use for cleaner footprint and greater cost savings

“Circular” site design and management

- smart mix of design, material procurement, and innovation to reuse, reduce, and recycle construction materials

Local economic development

- shared vision and customized initiatives that help transition local content programs toward long-term economic development

Impact and risk assessment

- environment, water, labor, climate, community, health and safety, responsible security, and human rights

Community engagement

- contextual intelligence for community engagement, social risk management, and strategic social investments

Procurement

- optimizing procurement opportunities in product specifications, strategic sourcing, fabrication techniques, and modes of shipping goods and materials

Strategic planning

- full spectrum of integrated services to deliver national and regional infrastructure and energy projects that generate better sustainable outcomes



Edmonton’s Valley Line light-rail transit extension, the largest infrastructure project undertaken by Alberta’s, Canada

Sustainability elements in the project:

- Nearly **90%** of project orders and subcontracts have been awarded to companies in Alberta and elsewhere in **Canada**
- **30% energy reduction** using a technology that stores and reuses energy from braking + passive temperature control to heat & cool the stations by controlling sunlight and shade
- The **maintenance facility obtained LEED certification**: save energy and water, reduce waste, and create a healthier indoor environment for workers
- **Removed trees only outside the bird-nesting season** and committed to planting about 17,000 more plants
- **Reduce, Reuse, and Recycle**: the company recycled 160 metric tons of steel, 6,600 tons of concrete produced from the roadwork, building demolition, and removal of the footbridge.

Conclusions

1. Sustainability agenda integrated into decision making process: priority areas, goals, KPIs, policies
2. Initial design tested for potential improvements in sustainability (BIM sustainability dimension): resources efficiency at the construction, operation and decommissioning stages, materials used, etc.
3. Sustainable & transparent supply chain, engaging local suppliers and using sustainable materials when applicable: sustainability requirements for suppliers, sustainable sourcing policy, suppliers audit on sustainability aspects
4. Sustainability at construction site: resources efficiency for supporting infrastructure, waste management, local staff engagement, cross-cultural aspects, etc.
5. Sources of funding: sustainable finance, when applicable



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