United Nations
Global Compact

RICS®

April 2018

Advancing Responsible Business in Land, Construction and Real Estate Use and Investment – Making the Sustainable Development Goals a Reality

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Act Responsibly: The Ten Principles of the United Nations Global Compact

The UN Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labour standards, the environment, and anti-corruption:

Human Rights

Principle 1   Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2   make sure that they are not complicit in human rights abuses.

Labour

Principle 3   Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4   the elimination of all forms of forced and compulsory labour;

Principle 5   the effective abolition of child labour; and

Principle 6   the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7   Businesses should support a precautionary approach to environment challenges;

Principle 8   undertake initiatives to promote greater environmental responsibility; and

Principle 9   encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle 10   Businesses should work against corruption in all its forms, including extortion and bribery.

United Nations
Global Compact

Find Opportunities: The Global Goals for Sustainable Development

1 NO POVERTY	**2 ZERO HUNGER**	**3 GOOD HEALTH AND WELL-BEING**	**4 QUALITY EDUCATION**	**5 GENDER EQUALITY**	**6 CLEAN WATER AND SANITATION**
7 AFFORDABLE AND CLEAN ENERGY	**8 DECENT WORK AND ECONOMIC GROWTH**	**9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**	**10 REDUCED INEQUALITIES**	**11 SUSTAINABLE CITIES AND COMMUNITIES**	**12 RESPONSIBLE CONSUMPTION AND PRODUCTION**
13 CLIMATE ACTION	**14 LIFE BELOW WATER**	**15 LIFE ON LAND**	**16 PEACE AND JUSTICE STRONG INSTITUTIONS**	**17 PARTNERSHIPS FOR THE GOALS**	**THE GLOBAL GOALS** For Sustainable Development

In September 2015, all 193 Member States of the United Nations adopted a plan for achieving a better future for all – laying out a path over the next 15 years to end extreme poverty, fight inequality and injustice, and protect our planet. At the heart of "Agenda 2030" are 17 Sustainable Development Goals (SDGs) and 232 related indicators that address the most important economic, social, environmental and governance challenges of our time. The SDGs clearly define the world we want – applying to all nations and leaving no one behind.

Companies can also play a significant role in meeting the ambitious targets of the SDGs.

While the scale and scope of the global goals is unprecedented, the fundamental ways that business can contribute remain unchanged. The UN Global Compact asks companies to first do business responsibly by making the Ten Principles an integral part of their daily business decision-making and operations and then pursue opportunities to solve societal challenges through business innovation and collaboration – both important contributions to the SDGs.

SDG Resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Blueprint for Business Leadership on the SDGs
- Business Reporting on the SDGs – An Analysis of the Goals and Targets
- Global Opportunity Explorer
- SDG Compass
- Sustainable Development Goals (SDGS)
- Sustainable Development Goal Indicators
- UN Global Compact Industry Matrix

Contents

Frequently used terms and abbreviations

Corporate Sustainability: Refers to a company's delivery of long-term value in financial, social, environmental and ethical terms – it entails both **respect** for universal principles and baseline standards in these areas, as well as proactive **support** for a sustainability agenda

ESG: Refers to Environmental, Social and Corporate Governance

Guiding Principles (GPs): Refers to the UN Guiding Principles on Business and Human Rights

Issue areas: Refers to the four issue areas which form the basis of the UN Global Compact Principles: human rights, labour, environment and anti-corruption

Life cycle: Refers to the land, construction and real estate life cycle comprising three phases: Development, Real Estate Use and Recovery

RICS: Refers to the Royal Institution of Chartered Surveyors

SDGs: Sustainable Development Goals (SDGs), also being referred to as Global Goals

Sector: Refers to the land, construction and real estate sector and its downstream users

SME: Refers to small and medium sized enterprises

UN Global Compact: Refers to the United Nations Global Compact

UN Global Compact Principles: Refers to the United Nations Global Compact's Ten Principles in the areas of human rights, labour, the environment and anti-corruption derived from The Universal Declaration of Human Rights, The International Labour Organization's Declaration on Fundamental Principles and Rights at Work, The Rio Declaration on Environment and Development and The United Nations Convention Against Corruption

Foreword

Since its inception in 2000, the United Nations Global Compact has called on companies everywhere to voluntarily align their operations and strategies with ten universally-accepted principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of wider UN goals. By doing so, business can help work towards the vision of a sustainable and inclusive global economy that delivers lasting benefits to people, communities and markets.

The Sustainable Development Goals (SDGs) provide a powerful aspiration for improving our world – laying out where we collectively need to go and how to get there. Successful implementation will require all players to champion this agenda. Private sector action will be key to the success of each goal – through responsible business operations, new business models, investment, innovation and technology, and collaboration.

Real estate is an often overlooked element of a company's responsible business agenda, but with its cross-sectoral reach it can be a powerful driver for corporate sustainability and for making the SDGs a reality. To fulfil this potential, real estate investment and development, its use, management and operation, as well as associated business activities, must accelerate efforts to be more responsible and sustainable.

For companies in the sector, successful implementation of the SDGs will strengthen the enabling environment for doing business and building markets around the world. Even the most principled and best-managed companies are challenged to thrive in communities marked by instability, to find skilled labour where adequate education is lacking, or to withstand natural disasters stemming from climate change.

The case is clear for direct stakeholders, real estate users and real estate investors to get involved, taking action on the goals which are strategically relevant from both a risk and growth standpoint. This will not only deliver social, environmental and ethical value, but is equally essential for long-term financial success. Responsible action needs to become 'business as usual' within global real estate markets. It will drive prosperity, innovation and investment, and helps secure our desired future: vibrant and transparent markets, thriving economies, inclusive communities and a greener, healthier planet.

To help advance the sector's role, the UN Global Compact and RICS have joined forces to tangibly map the relevance of the SDGs against the context of the land, construction and real estate sector.

The resulting resource: *'Advancing Responsible Business in Land, Construction and Real Estate Use and Investment'* is one of the first sector-specific initiatives of the UN Global Compact. It calls on all companies to think holistically about the impact of their daily business activities and their strategic investment decision-making when commissioning, planning, designing, constructing and operating buildings.

Our objectives are as follows:

- To promote awareness raising, learning and dialogue among the sector's stakeholders around the SDGs – including occupiers and real estate users;

- To facilitate closer collaboration across the sector and share good practices from companies that are already on their corporate sustainability journey; and

- To mobilize sector participants, real estate users, professionals and the wider stakeholder community to scale up their existing initiatives and become the true drivers of corporate sustainability and the SDGs within the sector and beyond.

Lise Kingo
CEO & Executive Director, United Nations Global Compact

Sean Tompkins
Chief Executive Officer, RICS

With its cross-sectoral reach, land, construction and real estate can be a powerful driver for corporate sustainability and for making the Sustainable Development Goals a reality.

1.0 About this document

1.1 Project background

'Advancing Responsible Business in Land, Construction and Real Estate Use and Investment' is a practical resource for all companies and other stakeholders operating in land, construction and real estate as well as for downstream users and investors **at each stage of the life cycle** irrespective of:

- their size;
- their geographical location; and
- their level of progress with regard to addressing and implementing the UN Global Compact's **Ten Principles in the area of human rights, labour, environment and anti-corruption <u>and</u> the Sustainable Development Goals**.

The document is designed to be relevant both to those companies directly operating in land and real estate development, planning, design, construction, real estate management, demolition and remediation as well as for end users, namely those companies that either use, commission, occupy or invest in real estate assets throughout the life cycle and those who act as the sector's advisors and suppliers.

'Advancing Responsible Business in Land, Construction and Real Estate Use and Investment' aligns the original 2015 edition of this document with the SDGs. The issues identified in this document are the result of a two year project jointly undertaken by RICS – a global professional body representing more than 100,000 members in 146 countries, and the UN Global Compact, a strategic policy initiative launched in the year 2000 for businesses committed to align their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

The UN Global Compact is the world's largest corporate sustainability initiative with over 12,000 signatories in 170 countries both developed and developing, representing nearly every sector and size. Its mission is to mobilise a global movement of sustainable companies and stakeholders to:

1. Do business responsibly by aligning their strategies and operations with Ten Principles on human rights, labour, environment and anti-corruption, and
2. Take action to advance broader societal goals, such as the Sustainable Development Goals, with an emphasis on collaboration and innovation.

The project was supported by the Centre for Real Estate at Karlsruhe Institute of Technology (KIT) and by a Steering Group of representatives from UN Global Compact participant organisations with relevance to the sector, representing large multi-national and national companies, small and medium sized enterprises as well as civil society, covering the following areas of business activities:

- Real estate investment and services
- Construction and development
- Construction materials supply chains
- Financial services

In addition, this document was also shaped by a dedicated group of RICS members and numerous stakeholders across the globe who either participated in the online consultation or actively contributed to the in-person consultation workshops held in major real estate hubs in the Middle East, Europe, Asia and North and South America as well as a consultation webinar held with stakeholders in Africa.

1.2 The land, construction and real estate sector

The land construction and real estate sector is one of the most influential globally when it comes to impacting the health and wellbeing of people and the environment. Economically, the sector represents more than 50% of global wealth.[1] The global construction industry alone is one of the largest sectors in the world.

By providing housing, the land, construction and real estate sector fulfils one of humanity's basic needs. In addition, apart from providing homes, education and recreational facilities for communities, through its various activities as a major employer with a diverse and complex supply chain, it also has the potential to positively impact local economies by providing jobs, training and industry. Through their distinctive architectural design, buildings are also the cultural expression of a society.

Whether as part of a rural community or in a slum settlement or in a big city, everybody lives, works and plays in buildings.

The sector and its impact on the UN Global Compact issue areas and the Sustainable Development Goals

The sector has a substantial sustainability impact through land development, resource use, waste generation and labour practices throughout its life cycle. Figure 1.1 illustrates a strong link with a significant number of SDGs. However, it only focuses on the most relevant real estate impacts. Chapters 3, 4 and 5 of this document show that the sector impacts either directly or indirectly the implementation of almost all SDGs. This is particularly the case with the issue of land governance.
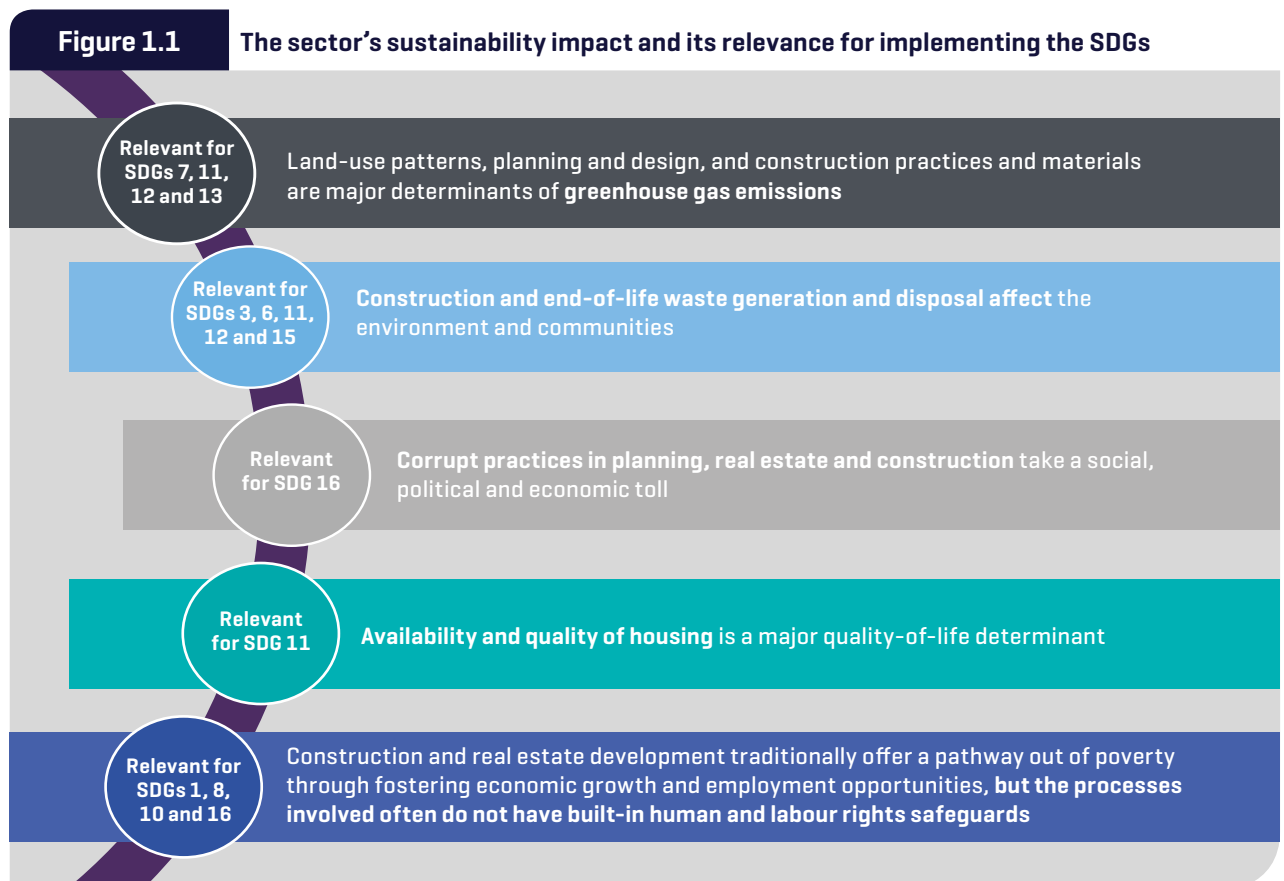
Demographic changes such as population growth, urbanisation, household size changes, and increasing levels of wealth and lifestyle changes globally are all bound to further acerbate this impact.

The sector and its current engagement with the UN Global Compact issue areas

At the time of the development of this resource, as witnessed through desk research and a survey carried out amongst UN Global Compact participants, the following general trends were seen in companies' engagement levels:

- Relevant corporate sustainability policies are in place in many companies operating in the sector, but actual implementation in daily operations appears to be a key challenge;

- Sector specific initiatives usually focus on one or two UN Global Compact issue areas only;

- Companies within the sector engage more prominently with environmental issues. There is significant scope for companies to improve current levels of engagement with the other UN Global Compact issue areas, namely human rights, labour and anti-corruption as these issues receive most media coverage and very high public attention when something goes wrong.

Land development, construction and real estate use constitute a crucial but often overlooked component of a company's overall sustainable development strategy.

| Figure 1.1 | The sector's sustainability impact and its relevance for implementing the SDGs |

Relevant for SDGs 7, 11, 12 and 13 — Land-use patterns, planning and design, and construction practices and materials are major determinants of **greenhouse gas emissions**

Relevant for SDGs 3, 6, 11, 12 and 15 — **Construction and end-of-life waste generation and disposal affect** the environment and communities

Relevant for SDG 16 — **Corrupt practices in planning, real estate and construction** take a social, political and economic toll

Relevant for SDG 11 — **Availability and quality of housing** is a major quality-of-life determinant

Relevant for SDGs 1, 8, 10 and 16 — Construction and real estate development traditionally offer a pathway out of poverty through fostering economic growth and employment opportunities, **but the processes involved often do not have built-in human and labour rights safeguards**

**Therefore, the three key objectives of this document are:**

1. **To raise awareness, increase capacity and give practical guidance** for responsible business within the sector by capturing and showcasing existing good practice of how the Ten Principles and the SDGs are already being implemented;

2. **To overcome** current silo-thinking amongst sector participants, its users and suppliers by promoting a holistic, whole life cycle approach and circular economy thinking; and

3. **To encourage** companies operating in the sector and those that invest in, commission and use land and built assets to widen the scope of their current policies and strategies by identifying both business opportunities and operational challenges relating to all UN Global Compact issue areas, i.e. human rights, labour, environment and anti-corruption, as well as broader UN goals, in particular the SDGs.

1.3 Who should use this document at company level and why?

Figure 1.2 shows the document´s key target audiences. Within those companies for whom real estate is not their core business, the document will be of particular interest for: **Chief Executive Officers**, **Board of Directors**, **Chief Financial Officers**, **Chief Operational Officers**, **Human Resources Directors**, **Senior Risk and Compliance Executives**, **Communications and Marketing Directors and CSR and Sustainability Officers**.

The unique feature of this document is its holistic, whole life cycle approach – both in terms of its target audiences as well as its scope. It demonstrates how all of the issue areas, and the action items for addressing them, are of relevance for implementing the SDGs.

Figure 1.2	Key target audiences
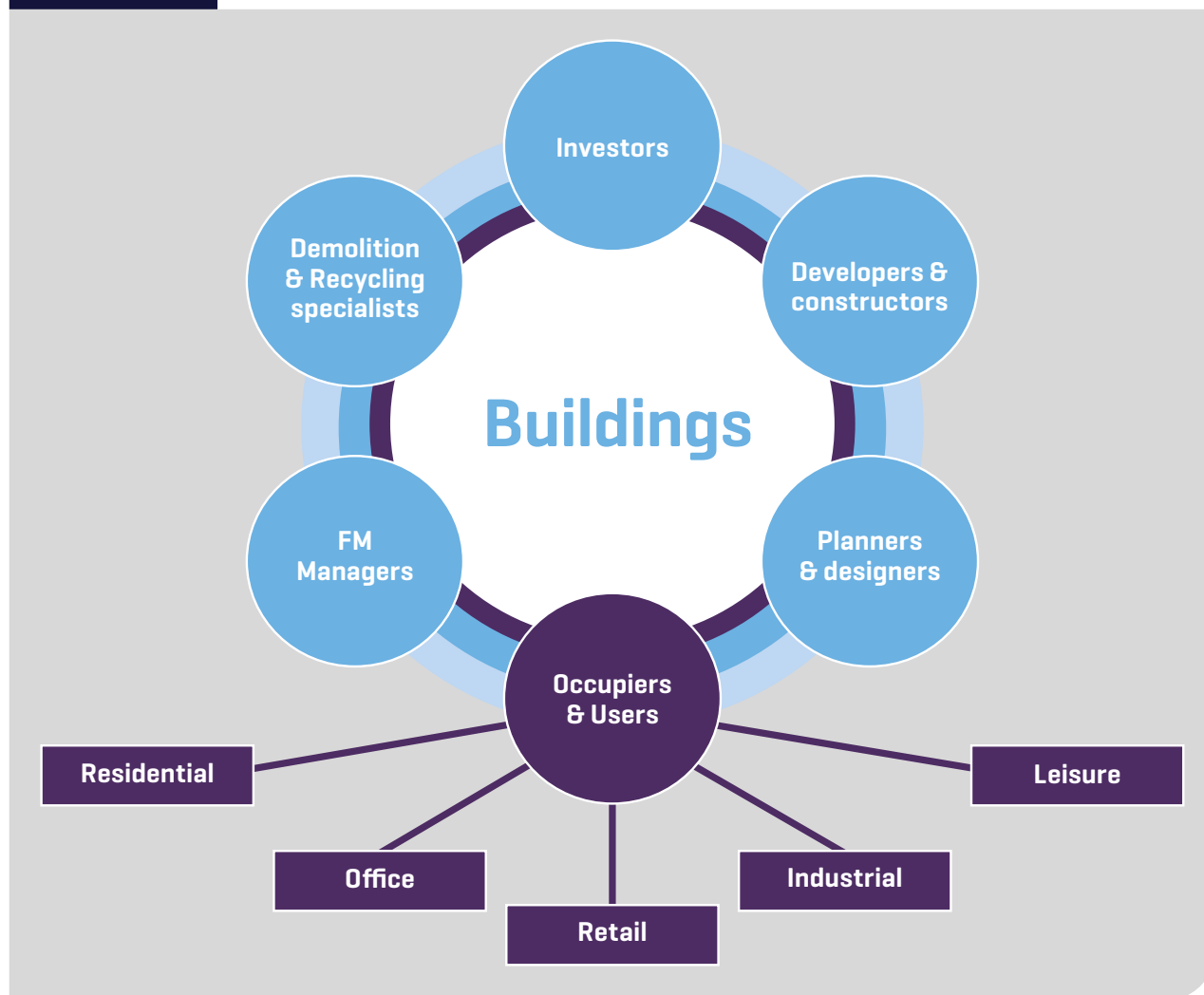
Going beyond legal compliance – three reasons to adopt responsible business practices within the sector:

1. **Public scrutiny**
   Investors, customers, existing and future employees and civil society increasingly expect companies to perform in accordance with values based principles

2. **Part of fiduciary duty of investors**
   It helps to build trust and confidence and contributes to reducing the risk of an investment

3. **It is the right thing to do**
   Leadership often has to come before the financial business case is fully established.

Even if real estate is not the core business of your company, it can still significantly affect the core.

In practical terms, applying '*Advancing Responsible Business in Land, Construction and Real Estate Use and Investment*' will help companies to:

- **tangibly demonstrate** their responsible business commitment with their real estate assets as the physical embodiment of their strategies and policies vis-à-vis investors, surrounding communities, existing and new customers as well as employees who may not always directly see (or fully understand) the company's sustainability efforts and investments

- **increase** brand value and reputation as a leader on Environmental, Social and Corporate Governance (ESG) issues through their approach to commissioning, designing, constructing and using their real estate assets

- **reduce** operational, supply chain related and reputational risks by complying with regulatory requirements and industry standards

- **reduce** supply chain related risks by securing consistent and long-term access to high quality raw materials and products

- **maximise** their human capital through improved working conditions and increased well-being

- **optimise** their operational resource efficiency by enabling bottom line cost savings (e.g. energy, water, waste efficiency, fewer raw materials used)

- **contribute** to overall social equity and stability thus creating a stable investment environment.

What this document is and does:

- **It is** an awareness raising resource for companies about both business opportunities and operational challenges regarding the investment, development, design, use and operation and refurbishment or demolition of their real estate assets in relation to implementing the Global Compact Ten Principles and the SDGs.

- **It identifies and explains** the link between the sector's business activities, the four issue areas of the Global Compact and individual SDGs.

- **It is** a practical whole life cycle orientated resource, aimed at giving companies guidance for corporate sustainability in relation to real estate management and decision-making by capturing and showcasing existing good practice, providing them with a list of relevant UN references for further consideration and a Self-Assessment Checklist, helping companies to define their current status in addressing the Global Compact's Ten Principles and implementing the SDGs in their daily business operations.

- **It reflects** different key stakeholders' involvement, varying priorities, interests, opportunities, challenges and risks at different points in the life cycle.

- **It seeks** to address issues of relevance both to developed countries (where the most critical issues lie with existing stock and associated refurbishment) and less mature markets (where the emphasis is on new construction).

- **It contains** recommended good practice for Global Compact participants and all other sector stakeholders, including real estate users.

What this document is not:

- **It is not** a technical manual.

- **It does not** provide an exhaustive list of issues, yet highlights some of the most impactful ones.

1.4 How to navigate this document

Figure 1.3 below provides an overview of the document's core chapter structure which is as follows:

- **Chapter 2** provides an introduction to the sectoral life cycle and its three phases.

- **Chapters 3, 4 and 5** cover the **three life cycle phases: Development, Real Estate Use and Recovery**, and their associated key issues, benefits action items as well as relevant SDGs. Each of these chapters also contains a respective life cycle segment diagram illustrating the level of impact of business activities on the four issue areas as well as an overview of the phase's five key issues and their relevance to the document's main target audiences.

- **Chapter 6** outlines the **Key Building Blocks of a Responsible Land, Construction and Real Estate Business Strategy** and summarises the impact of the whole life cycle on the four Global Compact issue areas and the implementation of the respective associated SDGs.

- **Chapter 7** consists of a **Self-Assessment Checklist** for companies to position themselves and their business activities in relation to implementation of the Ten Principles and the SDGs

- **Chapter 8** contains the **Issue Glossary** providing more in-depth background information to the key issues identified in chapters 3, 4 and 5.

- **Chapter 9** provides a summary of all the listed relevant **useful UN resources** and tools.

While each life cycle phase may be looked at individually, as the example below demonstrates, there are significant potential cross-impacts and linkages between the phases, the Global Compact issue areas and individual SDGs, *'Advancing Responsible Business in Land, Construction and Real Estate Use and Investment'* encourages stakeholders to consider the life cycle as a whole:

- **Developers and constructors**, who would naturally find most synergy with the Development Phase issues, may also want to take into account the subsequent phases of the life cycle to be able to assess the impact of their decisions on users, the building's operational phase and ultimately the building's end of life potential.

- **Investors, corporate occupiers and facilities managers** may want to extend their focus beyond the Real Estate Use Phase and consider the issues raised in the Development or Recovery Phases to inform negotiations with developers, constructors and suppliers before the start of a new construction or refurbishment project and before investing in and/or occupying a building.

Example for cross-impact between individual issue areas

A multi-national corporate occupier outsources its waste management to a subcontractor. The subcontractor bribes an official (*issue area: anti-corruption*) to turn a blind eye to the company's waste which includes hazardous substances being illegally dumped in a nature reserve (*issue area: environment*). The waste is handled by informal workers, some of them below the minimum working age without any protective health and safety equipment (*issue area: labour*). The nature reserve is close to a small agricultural community potentially poisoning both the community's water supplies and the soil thus threatening the livelihood of villagers (*issue area: human rights*).

Those consulting this document as a whole may find that there are certain overlaps between the life cycle phases, issues and action items. Given the nature of the sector and the complexity of the issues addressed, this is both intentional and inevitable. This is particularly the case with regard to the Development and Recovery Phases where the life cycle begins and ends. Land use issues are as important to consider before a building is erected as when it is taken down. Equally, a significant number of issues that are poignant during construction are equally important during refurbishment.

The stakeholder relevance map in Figure 1.4 highlights the relevance of the individual phases, issues and resulting action items for the six key target audience groups identified earlier. Given this resource´s objective of promoting whole life cycle thinking, the stakeholder relevance of some of the issues and actions is not necessarily confined to those directly involved at a certain stage. For example, the decision-making in relation to environmental stewardship and quality of planning, design and construction within the Development Phase is also of relevance to stakeholders in subsequent phases, such as users, facilities managers and as well as demolition and recycling specialists.

Within the group of occupiers and users, all of the issues and action items identified in Figure 1.4 are relevant to owner occupiers. The same applies to the group of investors.
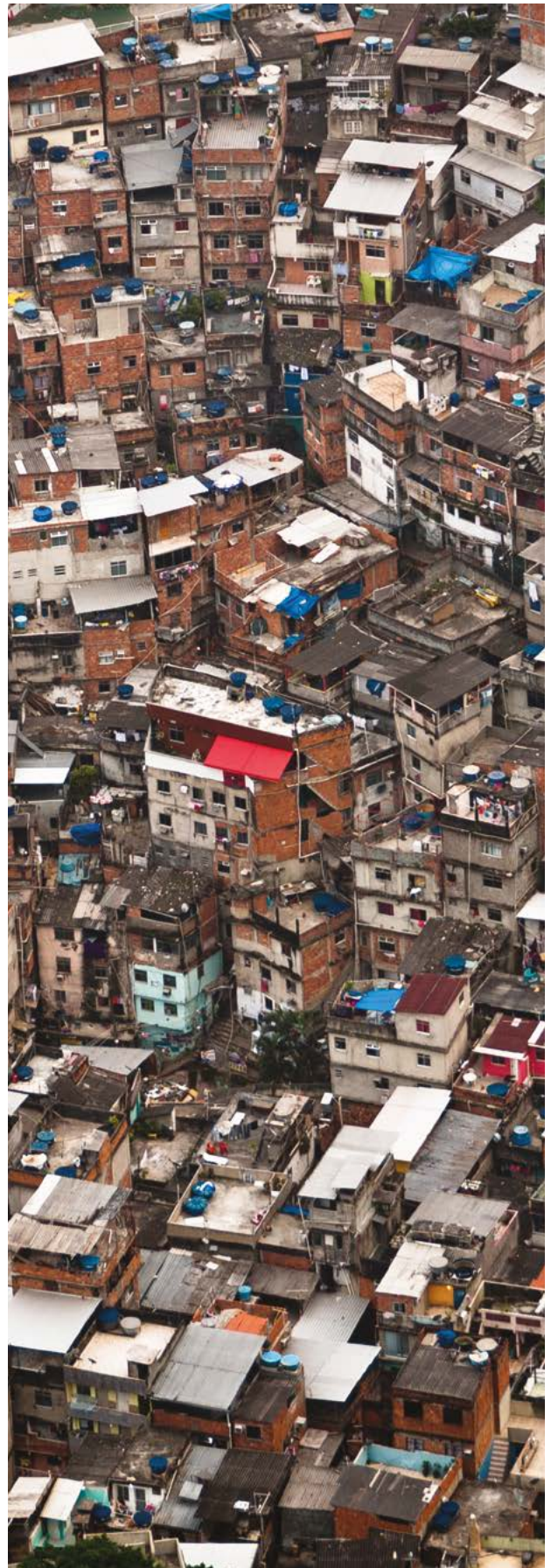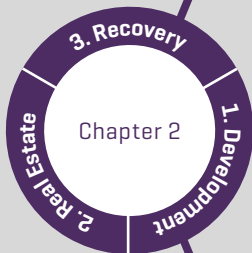
Advancing Responsible Business in Land, Construction and Real Estate Use and Investment – Making the Sustainable Development Goals a Reality

Figure 1.3   Document navigation map

The Land, Construction and Real Estate Life Cycle

Life cycle phase	Five key issues and main UN Global Compact issue areas impacted	Recommended actions
Development	**1. Land governance** — Human rights, anti-corruption, environment	
	2. Transparency and anti-corruption — Anti-corruption, environment, labour, human rights	**5 main action items & set of specific actions**
	3. Respecting workers' rights — Labour, human rights	
	4. Environmental stewardship — Environment, human rights	
	5. Quality of planning, design and construction — Human rights, environment	
Chapter 3		
Real Estate Use	**1. Transparency and disclosure** — Anti-corruption, environment, labour, human rights	
	2. Environmental stewardship — Environment and human rights	**5 main action items & set of specific actions**
	3. Treatment of tenants and communities — Human rights and environment	
	4. Health, safety and well-being of occupants — Labour and human rights	
	5. Decent work & human rights in the value chain — Human rights and labour	
Chapter 4		
Recovery	**1. Strategic site-use reevaluation** — Environment and anti-corruption	
	2. Refurbishment and retrofitting — Human rights, labour and anti-corruption	**5 main action items & set of specific actions**
	3. Waste management, resource conservation and recycling during demolition — Environment, human rights and labour	
	4. Brownfield regeneration — Environment, human rights and labour	
	5. Land recovery and rehabilitation of site — Environment and human rights	
Chapter 5		

Chapter 2 — 1. Development / 2. Real Estate / 3. Recovery

Chapter 6	**Key Strategic Building Blocks**
Chapter 7	**Checklist (for self-assessment)**
Chapter 8	**Issue Glossary**
Chapter 9	**UN Tools and Resources**

Figure 1.4   Stakeholder relevance map

Life cycle phase	Five key issues and main UN Global Compact issue areas impacted	Five action items per life cycle phase	Stakeholder relevance (▲ ▼ ● ■ ◆ ★)
Development	**1. Land governance** — Human rights, anti-corruption, environment	Enter into an open dialogue with members of the community at the point of land status change and at the planning and design stage	▲ ▼ ● ■
	2. Transparency and anti-corruption — Anti-corruption, environment, labour, human rights	Actively promote greater transparency and fight corruption at all levels	▲ ▼ ● ■
	3. Respecting workers' rights — Labour, human rights	Make responsible supply chain choices that respect the protection of labour and human rights	▲ ▼ ● ■
	4. Environmental stewardship — Environment, human rights	Take responsibility with regard for the environment at the point of land status change at the planning and design stage	▲ ▼ ● ■ ◆ ★
	5. Quality of planning, design and construction — Human rights, environment	Deliver safe, high-quality and well-designed buildings	▲ ▼ ● ■ ◆ ★
Real Estate Use	**1. Transparency and disclosure** — Anti-corruption, environment, labour, human rights	Improve internal processes for identifying and addressing corrupt practices and for increasing overall corporate transparency	● ■ ◆
	2. Environmental stewardship — Environment and human rights	Make environment stewardship an integral part of the daily operation of the building	● ■ ◆
	3. Treatment of tenants and communities — Human rights and environment	Interact with tenants and local communities	● ■ ◆
	4. Health, safety and well-being of occupants — Labour and human rights	Provide a safe and healthy work environment for employees	▲ ▼ ● ■ ◆
	5. Decent work & human rights in the value chain — Human rights and labour	Ensure decent work conditions for employees and subcontracted workers	● ■ ◆
Recovery	**1. Strategic site-use reevaluation** — Environment and anti-corruption	Carry out a thorough economic, social and environmental building and site-use reevaluation	▲ ▼ ● ■ ◆ ★
	2. Refurbishment and retrofitting — Human rights, labour and anti-corruption	Create conditions for carbon mitigation and resource use minimisation during refurbishment and redevelopment	▲ ▼ ● ■ ◆ ★
	3. Waste management, resource conservation and recycling during demolition — Environment, human rights and labour	Prepare an independent method statement and risk assessment for safe and efficient waste management at demolition stage	● ■ ★
	4. Brownfield regeneration — Environment, human rights and labour	Minimise impact on the environment and communities during brownfield regeneration	▲ ▼ ● ■ ★
	5. Land recovery and rehabilitation of site — Environment and human rights	Undertake an environmental impact assessment with regard to land recovery and rehabilitation	▼ ● ■

▲ Developers/constructors   ▼ Planners/designers   ● Investors   ■ Occupiers/users   ◆ FM Managers   ★ Demolition/recycling specialists

Key elements per phase chapter:

The five key issues

'Advancing Responsible Business in Land, Construction and Real Estate Use and Investment' **seeks to focus on some of the most high-impact and critical issues facing the sector.**

Nevertheless, the list of issues raised is not to be taken as an exhaustive one. Depending on the specific operating context, other risks may be more relevant. Therefore companies should put processes and systems in place to identify potential or actual adverse impacts across all social and environmental issues, and not limit themselves to those identified by this document. Every individual issue is signposted to its most relevant SDG(s).

Each life cycle phase is of equal importance and the document seeks to reflect that. However, the Development Phase and the issues identified within it lay the foundation for all subsequent phases, and as such it has been given particular attention.

The benefits

The benefits and opportunities highlighted cover strategic, operational and societal aspects.

The action items

On the basis of the issues identified, the document includes a set of action items in each phase that companies are encouraged to integrate into their everyday business operations, acknowledging that:

- implementing certain action items might initially be easier and more applicable at the project level before wider organisational roll-out;

- for some users of this document, some of the proposed action items are current state of practice while others are aimed at advancing the sector;

- markets and companies may be at differing levels of maturity;

- much of the new construction of this century will take place in the developing world and for companies operating in these developing or emerging economies the affordability of implementing certain action items may be prohibitive;

- there may be regional and national differences between companies as to the particular issues they may face when addressing certain action items;

- some of the action items identified may be currently difficult to implement against a specific socio-economic (and political) background; and that

- there may be significant differences between the capability of multi-national corporations and the many small and medium-sized companies (SMEs) that make up the sector's value chain who may not always have the necessary in-house skills and resources to address all of the action items and may therefore need to receive dedicated training and support, potentially from larger, more advanced companies for whom they act as suppliers or subcontractors.

To reflect this, the action items have been graded as follows:

- **'should'** action items correspond to the notion of **'respect'** and are considered necessary for all companies to meet their social and environmental responsibilities and to advance the UN Global Compact Principles; and

- **'could'** action items correspond to the notion of **'support'** and signal practices that today may be considered as leading or even pioneering and aspirational, but that may become mainstream over time. This might include practices that because of their complexity or technologically advanced nature might not be considered applicable in all settings or because of their current high cost might be prohibitive. 'Could' action items may be most useful for those companies that have already implemented a number of the recommended action items and want to use this document to identify further improvement opportunities with regard to their responsible business performance.

The list of UN resources and tools

Each action item is supported by a set of useful UN resources and tools that companies may wish to consult to gain a deeper understanding of some of the issues raised in this document.

The case studies

Each chapter also includes a set of real life good practice case studies that illustrate how companies are addressing specific challenges in relation to one or more of the issues in their daily operations.

2.0 The land, construction and real estate life cycle

2.1 The life cycle phases

For the purpose of this document, the land, construction and real estate life cycle has been divided into three key, interlinked phases, each of which contain their own individual processes within the supply chain (see Figure 2.1 below).

The three phases are:

1. Development
2. Real Estate Use, and
3. Recovery

Each of the three life cycle phases consists of individual interlinked stages. Despite the close links between individual stages, in practice, due to the fragmented and complex nature of the sector, stakeholders at a particular stage of the life cycle will typically assume that stakeholders at other stages have very different interests and concerns and, accordingly, commonly do not interact or communicate directly with each other, focusing only on the issues affecting their individual stage of the life cycle. This is particularly true in the case of real estate users who may occupy a building without taking an interest in, or having an opportunity to access, information about that building, including how the land was acquired, which suppliers and materials were used in its construction, or whether any human rights or labour rights were violated in the process of its development.

The key issues highlighted in the three life cycle chapters consider both residential and commercial and public sector buildings and their respective stakeholders.

| Figure 2.1 | The land, construction and real estate life cycle |
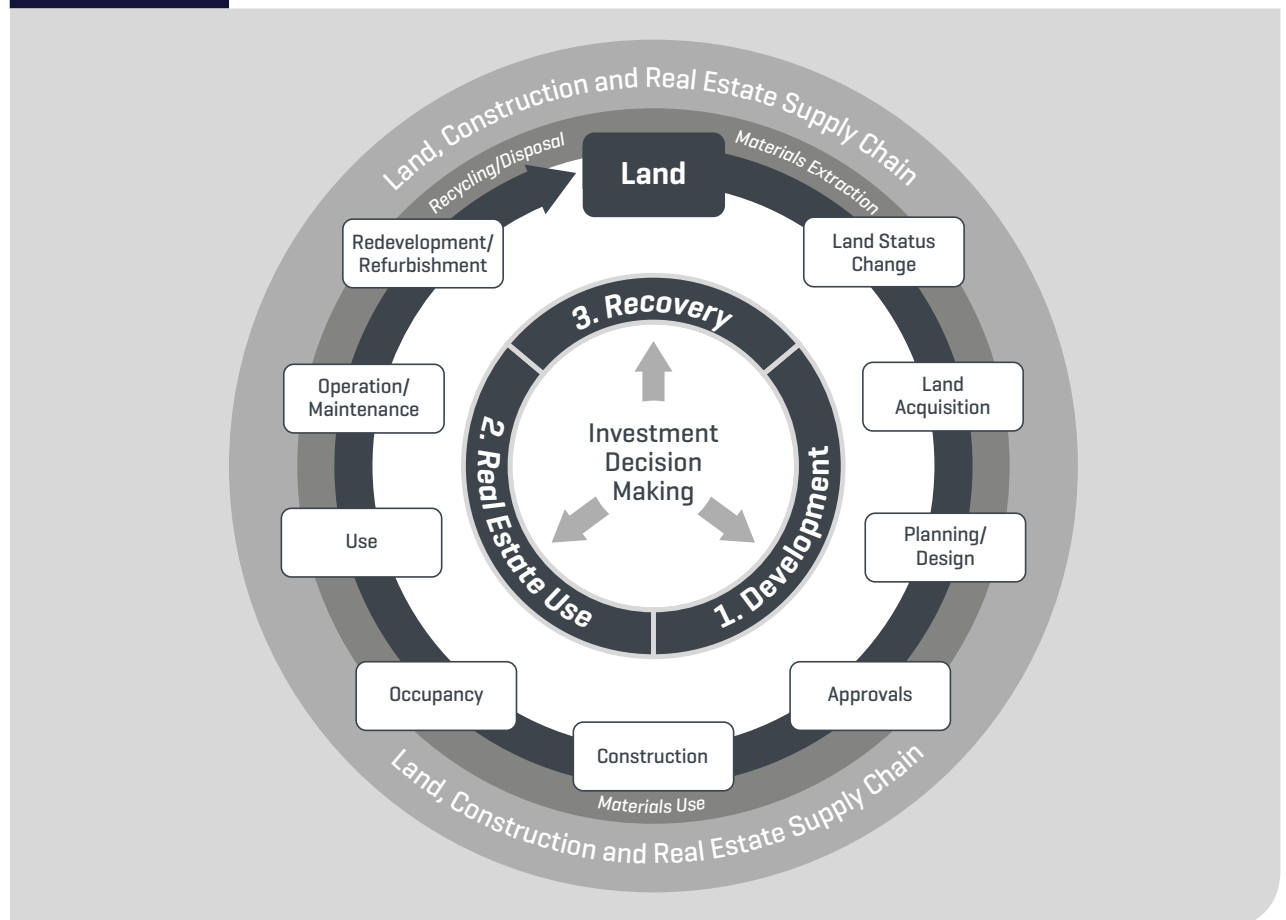
2.2 Individual stages of the life cycle phases

Within the Development Phase:

- **Land** is a generic term for an area of ground, particularly where it is used for the purposes of farming, building, mining and resource extraction. The unique characteristics of land compared with other resources are as follows: it is fixed and immobile; it is highly varied in nature, quality and use; it is the base from which all other resources stem; it is often subject to rent or tenure arrangements (unlike other resources which are often only bought and sold); and it often comes with particular emotional attachments for people as property or territory, etc.[2] In many jurisdictions, it is the 'rights' over land which are exchanged.

  Depending on the geographical context, land that has never been developed or used before is often referred to as a greenfield site, range land or state land (typically former agricultural land). Developed land refers to real estate with fixed structures and/or infrastructure. Land that previously has been developed or used, typically in an industrial or commercial context, is referred to as a brownfield site. For certain types of land uses and developments land can be a wasting asset. For example, this applies to uses such as mineral extraction, landfill and burial grounds.

  Land as the source of development, resources, security and wealth has been given a central role in the life cycle as it is not only where the life cycle originates, but also where it concludes. In addition, in many parts of the world, land is intrinsically linked to culture and as such to cultural rights, a key element of the UN's Universal Declaration of Human Rights.

- **Land status change** is the process by which the status and use of land is altered, for example, through the operation of an official registration, cadastral or zoning procedure or a land-use planning system. An example of such a land status change is the transformation of a greenfield site into agricultural or development land.

- **Land acquisition** describes the formal procedure of acquiring a site typically either through a process of private negotiation between a consenting buyer and seller, or through a process known as 'compulsory purchase of land'[3] by a public authority following a fair valuation of the land and its assets (such as standing crops, buildings, etc.).

- **Planning/design** comprises the preparation of a design for a development involving the client and future users in consultation with the building design team (typically including an architect, engineer and/or surveyor). The process starts with preparing preliminary design proposals which are then developed in detail by the building design team.

This stage involves the preparation of drawings, cost estimates and tender documents, and ends with the tendering process. Planning can also occur at the community level and sets priorities for current and future development.

- **Approvals** refer to the formal approval documents that are required to be issued under the applicable process in the relevant jurisdiction before development or building can commence. Typically, required approvals include planning consent, conservation certifications, and certificates of compliance with land use planning requirements, construction codes, building regulations, warrants and fire regulations. It is usually the building design team that obtains the official documentation. In reality, country specific practices and requirements can vary; for example, there may be a pre-approval stage in which preliminary designs and specifications are submitted to the local planning authority before the final documentation is handed in. An economic, social and environmental impact assessment may also be required as part of this process.

- **Construction** is a term that describes not only the process of erecting a building but also usually includes any tendering process leading to the procurement of a new development contract. Construction is often undertaken by a main contractor and an associated supply chain of subcontractors and suppliers under the supervision of the building development or design team, an independent project manager and health and safety and building inspectors.

Within the Real Estate Use Phase:

- **Occupancy** refers to the use or intended use of a building. It typically begins when the building is handed over at the completion stage to the owner or user(s) and ends when the building is vacated.

- **Use** is a generic term that describes the utilisation of a building and its associated services on a day-to-day basis by its intended users, normally guided by a facilities management system.

- **Operation/maintenance** refers to the process of servicing buildings so that they continue to operate in a safe and comfortable manner (including cleaning, repair work and other maintenance).

Within the Recovery Phase:

- **Redevelopment** takes place if the building no longer fulfils its economic and/or physical function, there are two fundamental choices:

  a. to refurbish or replace the building, possibly in order to accommodate a change of use; or

  b. to decommission and demolish the building, ideally returning the site to its previous natural or cultural use.
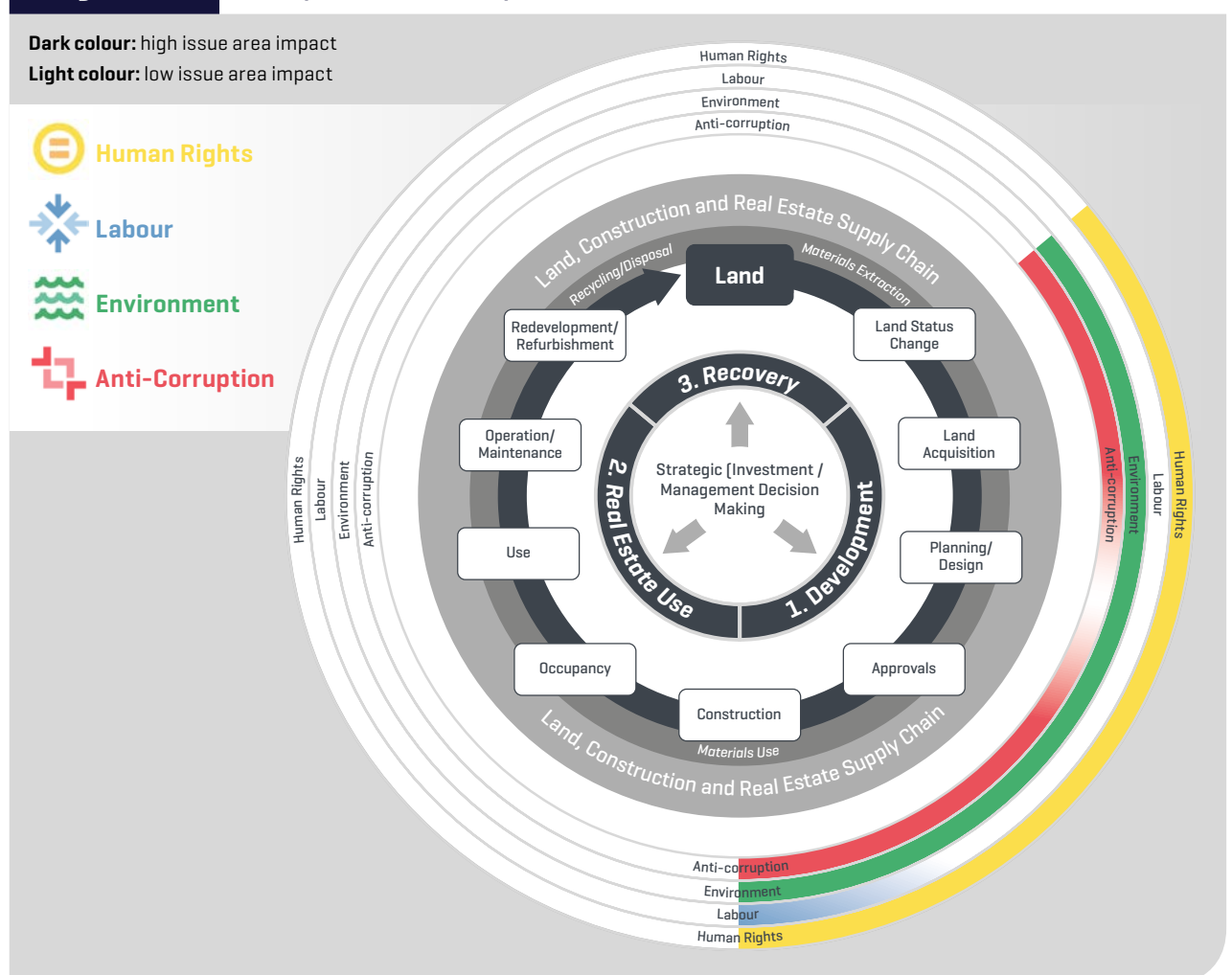
3.0 The development phase

3.1 Introduction

The **Development Phase** is the first phase of the life cycle and includes the point of land use status change, the design stage and the conclusion of construction. **This chapter is aimed primarily at companies operating in the Development Phase**. However, all companies should pay close attention to the issues set out in this chapter, as any material departures from good practice during the Development Phase, such as failing to perform social, economic and environmental impact assessments in respect of the whole life cycle (especially with regard to supply chain choices) potentially can have serious implications for those involved in later stages of the life cycle. There is often a disconnect between delivery and operation as developers tend to build and deliver the building for third parties who normally have had no connection with the development. The latter de facto inherit an asset which may come with features that are hard to change or manage during use. Bad planning and design are very difficult, and often impossible, to correct for end users at a later stage, and if so, involve considerable time and expense.

A badly designed building built with poor quality materials may not only impact resource efficiency and user experience during the Real Estate Use Phase, it can also create long-term problems in terms of refurbishment and/or recycling capabilities during the Recovery Phase.

| Figure 3.1 | The impact of the Development Phase on the individual issue areas |

Dark colour: high issue area impact
Light colour: low issue area impact

As indicated in Figure 3.1, human rights, anti-corruption and environmental issues are key considerations for the whole of the Development Phase whereas labour issues are most prevalent during the construction phase.

While Figure 3.1 illustrates the impact of the individual stages within the Development Phase on the four issue areas, Figure 3.2 highlights the five key issues identified by sectoral stakeholders as critical for the Development Phase due to their significant impact on the four issue areas.

Figure 3.2   **Development Phase – Five key issues and their stakeholder relevance**

Life cycle phase	Five key issues and main Global Compact issue areas impacted	Stakeholder relevance
Development	**1.** **Land governance** Human rights, anti-corruption and environment	▲ ▼ ● ■
	2. **Transparency and anti-corruption** Anti-corruption, environment, labour, human rights	▲ ▼ ● ■
	3. **Respecting workers' rights** Labour, human rights	▲ ▼ ● ■
	4. **Environmental stewardship** Environment, human rights	▲ ▼ ● ■ ◆ ★
	5. **Quality of planning, design and construction** Human rights, environment	▲ ▼ ● ■ ◆ ★

▲ Developers/constructors   ▼ Planners/designers   ● Investors   ■ Occupiers/users   ◆ FM Managers   ★ Demolition/recycling specialists

3.2 Five key issues, action items and associated benefits

3.2.1 Land governance

Relevant for implementing SDGs:

The Food and Agricultural Organization (FAO) estimates that over the past decade, 227 million hectares of land, an area the size of Western Europe, were sold or leased to international investors (mostly within developing countries).[4] Appropriation of land, either through acquisition of a formal title or as a right to use land, requires a fair and equitable process to be adopted. Land governance, administration and management are closely intertwined.

Land administration, as defined by the UNECE, is the *"processes of determining, recording and disseminating information about the tenure, value and use of land when implementing land management policies"*.[5]

While the development of buildings can be driven by international investment, the land they are built on is by nature local and **any land development must respond to the needs of the local communities they are located in**.

Land often gives rise to highly contentious issues, including the location of sites for development, the transfer of certain rights which may not be transferred with the land (such as mineral rights) and the manner in which those sites are then obtained and used.

Many of today's most pressing challenges such as climate change, urbanisation, gender inequality, increased demand for natural resources, food, water and energy insecurity, and violent conflict are inextricably linked to land.[6] Whether directly or indirectly, land use decisions are decisive for achieving the majority of SDGs.

With any land development, the key issues that need to be addressed relate to past, present and future ownership and use of that land. Whether the development is on a greenfield site or a brownfield site will significantly shape the relevant considerations. The use of greenfield sites (or range or state land) seems to be the area most subject to risk when developing.

Land use exploitation often targets economically deprived communities. Major issues to be considered in this context are: expropriation, forced evictions and impacts to surrounding communities (e.g. relocation, zoning, flood plane management); wildlife habitats and preservation areas and biodiversity; and mining extraction.

Globally, the process of land development varies greatly, driven by local political, socio-economic and other factors that depend on geographical location. For example, land reform programmes, indigenous peoples' rights and different planning and building codes may all affect how land development is approached within a particular location.

Additionally, the presence of vulnerable wildlife habitats, significant presence of biodiversity or the existence of natural resources may also influence how land development is implemented and the types of institution involved. For example, it may be organised by a specialised company, sometimes with its own financial resources and completely different from the real estate developer model conventionally involved with the built environment aspect of development.

With regard to the issue of land governance, key points of consideration are: *land value, tenure (formal, informal and customary security), indigenous peoples, right to housing and food, involuntary resettlement*

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of land governance, companies are encouraged to:

Enter into an open dialogue with members of the community at the point of land status change and at the planning and design stage

- **Companies should** carry out a thorough ESG impact assessment which should adhere to the FAO Guidelines of Responsible Governance of Tenure[7] and cover the protection of human rights (access to clean water, sanitation, housing, food, etc.) including impacts on groups that may be at heightened risk of vulnerability or marginalisation, such as, children, persons with disabilities, the elderly and indigenous peoples, and differentiated impacts on women and men. A comprehensive ESG impact assessment should cover:

  – effective consultation with all stakeholders to seek approval of the project at conception stage;

  – recognition and respect of the concept of free, prior and informed consent (FPIC), a fundamental measure adopted by the UN Declaration on the Rights of Indigenous Peoples to ensure that the rights of indigenous peoples are protected. FPIC implies a decision-making right[8] of indigenous peoples to either permit, agree to a modified version of, or to withhold consent to, a project or activity[9] in relation to certain development projects[10];

  – the development of grievance mechanisms and complaint processes that seek to fairly resolve the concerns and disputes of individuals, workers or communities.

- **Companies should** ensure equitable land acquisition. Compensation for any land that is acquired should be based on the market value of the land (which also may include special ex gratia payments, such as for the loss of value of crops).

- **Companies should** avoid involuntary resettlement of communities to the extent feasible, or to minimise and mitigate its adverse social and economic impacts. They should promote participation of displaced people in resettlement planning and implementation and assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement.

- **Companies should** ensure that land acquisitions by governments/others have been executed properly so that the company does not 'inherit' land disputes.

- **Companies should** respect indigenous people's formal, informal or customary claims on land, if these have been recognised or are being considered by appropriate authorities.

- **Companies should** ensure that when buying land through agents and advisers that these do not take any short cuts on their behalf with regard to the process of fair and equitable land acquisition in alignment with national and international standards.
- **Companies could** to the extent possible, hire local labour to bring benefits to the local community, and give consideration to the conclusion/completion of contracts with enterprises within the community leading to multiplier effects in local economic development.

Benefits and opportunities relating to good **land governance**:

☑ Creates secure title, which protects the interests and rights of existing owners while also creating secure opportunities for real estate investment by businesses

☑ Offers reputational benefits to companies and contributes to overall brand value

☑ Helps to avoid conflicts of interest between different stakeholders

☑ Creates social benefits derived from the acquisition of land based on a fair and equitable negotiated value, fostering the long-term value of social stability

☑ Giving access to the public realm through mixed use development of land will also give economic support to the many SMEs that make up a large proportion of the group of real estate users

Open dialogue benefits construction materials supplier and community

Wanting to build stronger, long-term relationships with local communities, a construction materials producer established a liaison committee at its plant in Puerto Rico composed of community representatives and employees to identify and address community concerns. The committee meets on a monthly basis and is open to all people from surrounding communities. Committee members include the site's director of operations and the environment, the community relations manager and 15 community leaders.

In response to concerns raised at committee meetings, the company has installed new dust filters, re-paved nearby roads and purchased a road-sweeping vehicle, all of which will directly benefit the company's neighbours. A quarterly newsletter updates the wider community on progress against the commitments the company has made at the meetings and disseminates other relevant news suggested by community leaders.

Complaints from the community fell by more than 70% in one year, showing that open dialogue brings benefits to business and local communities alike.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Secure Land Rights for All
- Women's Empowerment Principles
- Indigenous Peoples' Rights
- UN Declaration on the Rights of Indigenous Peoples
- ILO Convention 169
- Understanding the Indigenous and Tribal People Convention, 1989 (No. 169) – Handbook for ILO Tripartite Constituents
- Good Practice Note on Free Prior and Informed Consent
- Business Reference Guide to the UN Declaration on the Rights of Indigenous Peoples
- Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security

- Implementing the Pinheiro Principles – Handbook on Housing and Property Restitution for Refugees and Displaced Persons
- ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy
- Rights of Indigenous Peoples – customary rights to lands, territories and resources International Finance Corporation's (IFC) Performance Standards
- The Poverty Footprint
- Sustainable Development Knowledge Platform, Goal 1
- Sustainable Development Knowledge Platform, Goal 2
- Sustainable Development Knowledge Platform, Goal 5
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 10
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 15
- Sustainable Development Knowledge Platform, Goal 16

Case Study

Social impact management and engagement with local communities

Aware of the potential for the construction and operation of building projects to dramatically impact the lives of local communities, a global infrastructure developer designed a methodology for social impact management of its projects based on international standards, adapted to the different business operations it is engaged in and to different geographic contexts. An internal procedure has been developed for implementing the methodology, which begins with an assessment of social risks when identifying business opportunities and submitting offers. Once a project has been awarded, a detailed study of the region and local populations is carried out, addressing socio-economic indicators such as ethnic diversity, economic activities, access to basic services, poverty indices, employment ratios and education. Once this information has been collected, the impact of the project on these communities is assessed and measured in terms of severity and duration. The effort and resources that the company then allocates to individual projects are aligned with the respective potential social risks of each type of project. Importantly, in order to find out first-hand about a community's needs and opinions, meetings are held with stakeholders.

The list of stakeholders invited to meetings typically include:

- local authorities and political parties;
- neighbourhood associations;
- educational associations;
- religious associations;
- direct and indirect employees;
- trade unions;
- suppliers of goods and services;
- owners of land where the project will be located – or neighbouring landowners – who might need to be relocated;
- beneficiaries and users of the project;
- sectoral associations covering the following: industrial, agricultural/livestock, fisheries, commercial, hotel and catering and tourism;
- community services, such as representatives from police, public transport, fire services;
- NGOs and foundations; and
- any other stakeholders not organised in associations and without representatives that could be affected by the project.

Practical example:

The construction of the company's first wind farm in Chiripa, Costa Rica, was accompanied by an ambitious plan to manage the project's social impact. While the wind farm permits were being obtained, the project was presented to local stakeholders (authorities, agencies, residents associations, etc.) and opinion surveys were conducted.

These conclusions shaped subsequent actions. 50% of the people employed during the construction and assembly of the wind farm, were local labourers. The company also undertook the drilling of a new well for provision of quality drinking water which had been a particular concern of local residents, fitted out sports fields, installed sewers and repaired country roads, among other actions which will be continued through a number of community outreach projects to be conducted each year while the wind farm is operational.

In addition to the benefits that the thorough social impact assessment and stakeholder communication brought to the local community, the company itself also realised numerous benefits including improvement of relations with local communities, protection of the company's reputation, prevention of unexpected costs during the project implementation and the perception of an 'added value' to the company's tenders.

3.2.2 Transparency and anti-corruption

Relevant for implementing SDGS:

Transparency International defines corruption as "the misuse of entrusted power for private gain" [11]. Corruption falls into the following categories: *"grand, petty and political, depending on the amounts of money lost and the sector where it occurs"*.[12]

Corruption is a crime that is wider than bribery and extortion. In accordance with this approach, the 10th Principle of the UN Global Compact calls for companies to work against corruption in all its forms, including extortion and bribery.[13]

According to Transparency International, corruption in the sector results in projects which are unnecessary, unreliable, dangerous, and over-priced. Corruption also can lead to the use of substandard building materials or construction techniques, resulting in an unsafe or substandard structure. This, in turn, can lead to **loss of life, poverty, economic damage and underdevelopment**.

Transparency International, OECD and the American Society of Civil Engineers estimate that **losses due to corruption during the construction process on public infrastructure projects can range between 10-30% of overall contract values.**[14] **Globally, the economic cost of corruption and mismanagement is equivalent to 5% of total global Gross Domestic Product (GDP).**[15]

Securing work contracts by means of bribery might benefit the 'winning company' in the short term (to the detriment of other, potentially more deserving companies), but once such corrupt practices become commonplace in the industry they will ultimately pose a problem to all concerned, as they become a de facto cost of doing business. One of the biggest problems associated with corrupt practices is missing costs.

These sums will likely continue to escalate as companies inevitably raise the value of their bribes when competing for new business. Bribery also may also foster the illusion that business growth is due to market demand and due to quality of the product and its pricing.

Corruption thrives where there is a lack of institutionalised checks on power and where decision-making processes are not transparent.

While corruption is a cross-cutting issue that can occur in all phases of the life cycle, it is during the Development Phase where heightened attention should be paid to this critical issue (whether at the crucial stage of land-use status change, obtaining of approvals, or during construction).

The **Extractive Industries Transparency Initiative** was launched in 2003 for the extractive industries sector which includes some quarrying activities related to construction. The construction industry, however, has yet to establish a protocol on transparency, although the World Bank-supported **Construction Sector Transparency Initiative (CoST)**[16] programme is seeking to improve transparency for the construction of public infrastructure. Even in the absence of a specific protocol, there are a number of practical steps that companies can take to deter government officials, subcontractors or suppliers from bribery.

With regard to the issue of transparency and anti-corruption, key points of consideration are: *bribes/facilitation payments, bid-rigging*

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of transparency & anti-corruption, companies are encouraged to:

Actively promote greater transparency and fight corruption at all levels

- **Companies should** put in place control mechanisms and systemic barriers to prevent people from having the opportunity to engage in, and to benefit from, abuses of power. This can be achieved by structuring bids/tenders in the form of sealed bids that are opened in public or by an online anonymous application procedure.

- **Companies should** adopt a project-by-project process with regard to fighting corruption. Within that process Transparency International advises following their three key principles: build partnerships, proceed step-by-step, and stay non-confrontational.

- **Companies should** provide training to employees at all levels on all corruption issues and the potential legal and reputational consequences of engaging in corrupt and in-transparent practices.

- **Companies should** report progress on how they address the four UN Global Compact issue areas (anti-corruption, environment, labour, human rights) with regard to the Development Phase. This can be done either against The Construction and Real Estate Sector Supplement of the Global Reporting Initiative (GRI CRESS)[17], within a standalone annual sustainability report or as part of an integrated financial reporting.

- **Companies could** encourage employees to raise questions or concerns without fear of consequences, for example through the use of a reporting hotline.

- **Companies could** jointly promote collective action through measures such as integrity pacts, anti-corruption declarations, certified business coalitions, principle-based initiatives and education and training with representatives from government, the private sector and civil society

Benefits and opportunities relating to transparency and anti-corruption measures:

☑ They provide both strategic and reputational advantages for a company. Any action taken may be outwardly viewed as a tangible example of a company's commitment to corporate and social responsibility. Third party stakeholders such as investors, non-governmental organisations, regulators, clients and downstream users will recognise a company's emphasis on transparent business behaviour

☑ They help to not only create a level playing field amongst competitors but also avoids unnecessary additional business costs, encourages innovation (as companies seek other ways to stand out from their competitors) and avoids putting additional pressure on poor communities to pay bribes for basic services and rights

☑ Given the extent to which corruption hinders economic development, especially in developing countries and those living in poverty, all corners of society stand to gain from increased transparency in the sector

☑ They increase foreign investor confidence and fair competition in new markets

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- UN Global Compact Anti-Corruption Hub resources
- Business Against Corruption – A Framework for Action
- UN Global Compact for the 10th Principle: Corporate Sustainability with Integrity
- Reporting Guidance on the 10th Principle Against Corruption
- Stand Together Against Corruption: A Practical Guide to Help Prevent Corruption in the Supply Chain
- Fighting Corruption in the Supply Chain: A Guide for Customers and Suppliers
- Collective Action in the Fight Against Corruption
- UNODC-UN Global Compact anti-corruption e-learning tool for the private sector
- An Anti-Corruption Ethics and Compliance Programme for Business: A Practical Guide
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 10
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 16
- Sustainable Development Knowledge Platform, Goal 17

Zero ethical breaches vision – from policy to implementation

In light of the growing number of real estate users and project developers demanding ethically constructed buildings, an international construction and development company adopted a 'zero ethical breaches' vision for its operations. It achieves this vision through a number of initiatives, by:

- providing a detailed Code of Conduct to all employees;

- providing mandatory training on the Code of Conduct in the first few months of employment for all employees (including training on best practice in the event of real or fictional 'ethical dilemmas');

- requiring all subcontractors to sign up to the company's Code of Conduct;

- developing an 'Ethics Roadmap' which details steps for each of the company's subsidiaries to take to improve their ethical compliance;

- creating an 'Ethics Hotline' through which employees and other stakeholders can anonymously report potential ethical dilemmas;

- forming local ethics committees which assess all reported ethical dilemmas on a case by case basis;

- forming a global ethics committee to deal with all ethical dilemmas that cannot be resolved by local ethics committees; and

- conducting an 'Ethics Scorecard Survey' every six months globally which measures progress in training and how reports to the ethics hotline have been dealt with.

The company's vision has led to the development of trusting relationships with clients, subcontractors, employees and other stakeholders which in turn has positioned the company very well for winning new work and retaining like-minded clients.

3.2.3 Respecting workers' rights

Relevant for implementing SDGs:

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

16 PEACE AND JUSTICE STRONG INSTITUTIONS

Companies can play an important and positive role in ensuring respect for workers' rights in their own operations and promoting respect among their business partners. The UN Global Compact highlights in Principles 3, 4, 5 and 6 the fundamental principles and rights at work. Especially during the Development Phase, construction companies hold a great potential to create more and better jobs with possible positive impact on a number of other labour issues such as training, occupational health and safety, other working conditions, and social protection[18].

Ensuring the respect of workers' rights can be challenging in the context of construction. There are an estimated 110 million formal construction workers across the globe. An equivalent number is working informally (mainly in supply chains) and therefore most vulnerable to human rights abuses.[19]

The construction sector is also characterised by unskilled or semi-skilled workers who learn mainly through on-the-job training. Many workers are paid below minimum wage and are forced to work beyond standard work hours. Others are being moved across borders into what they believed are legitimate temporary construction jobs only to find themselves imprisoned at the site, without payment and often physically abused. **Fair treatment of workers is particularly challenging when there are multiple contractors using subcontractors and where respect of workers' rights need to be ensured throughout the subcontracting chain**.

With regard to the issue of respecting workers' rights, key points of consideration are: freedom of association, collective bargaining, non-discrimination, occupational health & safety, forced labour, human trafficking, migrant workers, child labour

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of respecting workers' rights, companies are encouraged to:

Make responsible supply chain choices that respect the protection of labour and human rights

- **Companies should** carry out a thorough risk and opportunity assessment of the impact their own overall business activity has on labour and human rights, including an assessment of the impact of those within their local and global supply chains and develop a labour and human rights supply chain management policy.

- **Companies should** encourage, or, where appropriate, require their suppliers to develop their own internal labour and human rights policies.

- **Companies should** stipulate that they will only enter into business arrangements with suppliers/contractors (tier 1) and subsuppliers/subcontractors (tier 2 and subsequent) that have a proven track record of meeting certain standards with regard to respecting workers' rights, including such issues as forced and/or child labour and respect for the rights of potentially vulnerable groups (such as indigenous people and migrants).

- **Companies should** ensure that main contractors make responsible supply chain choices with regard to subcontractors to ensure full compliance with national or ILO labour rights and occupational health and safety regulations.

- **Companies should** take action to ensure the respect of workers' rights, formal or informal and, in accordance with the Decent Work Agenda set forth by the International Labour Organization[20], provide opportunities for decent work.

- **Companies should** establish practices to ensure a safe and healthy work environment in accordance with international labour standards.

- **Companies should** play a key role in the fight against forced labour and human trafficking, practices which are particularly common in the informal labour market. Relevant steps include having a clear and transparent company policy, setting out the measures taken to prevent forced labour and trafficking, while indicating that the policy applies to all enterprises involved in a company's product and supply chains.

- **Companies should** carry out due diligence with regard to suppliers or subcontractors potentially engaged in child labour, especially when dealing with suppliers or subcontractors who operate in jurisdictions where forced and child labour may not be illegal or not adequately monitored or policed.

- **Companies should** develop strategies around non-discrimination and expand business relationships with women-owned enterprises, including small businesses, and women entrepreneurs.

Benefits and opportunities relating to respecting **workers' rights and the abolition of child labour:**

☑ Prioritising the health and safety and other sound working conditions of its construction workers has a number of obvious benefits to a company, including improving employee productivity, reducing staff turnover, improving recruitment rates and improving the reputation of both the company and the sector generally

☑ Benefits of health and safety and sound working conditions also include reduced compensation claims which may impact on a company's legal fees, court processes, insurance premiums, etc.

☑ Good human rights practices can help attract new business, including public sector procurement contracts. There is an increased consumer demand for buildings that have been constructed in a socially responsible manner. Land and property users will increasingly seek assurances from developers that workers' welfare was properly protected during the relevant development works and that local communities and in particular children's rights have been respected

☑ Ensuring the fair treatment of women in the industry will produce positive business impacts by broadening the pool of the potential workforce, including key specialists

☑ Training and capacity building of their workers offers companies the benefit of having a better skilled and more knowledgeable workforce which can lead to higher motivational levels

☑ Fostering and developing a skilled local labour force can reduce levels of local crime as more jobs in the area will lead to closer engagement with the community, creating a sense of pride and ownership.

Case Study

Surpassing health and safety regulations and developing a project safety culture in emerging markets

On a recent commercial development in Bucharest, Romania, an international construction and development company sought to influence and improve local workers' health and safety standards through policies of internal policing of these matters well beyond local requirements.

The company's project team worked closely with local contractors and suppliers, providing them with regular training and holding team meetings to raise awareness of specific health and safety and environmental issues and to improve the overall standard of construction practices. For example, project partners were encouraged to report all unsafe behaviour, near misses and accidents they had witnessed in order to discuss (and learn from) their experiences with other project partners. So-called monthly VOICE meetings (Views of Operatives in Construction Environment) gave workers on the site the opportunity to speak openly with the management team that leads the project about how they felt working at the site.

All new construction staff received extensive training on the company's ethical culture, code of conduct and specific safety issues, as well as being involved in the implementation of a comprehensive waste management strategy, which led to **95% of construction waste being diverted from landfill**. Many of the company's initiatives regarding such issues were new to the local project partners, subcontractors and suppliers, with national health and safety and environmental standards being exceeded. Going beyond immediate health and safety issues on the site, the company also facilitated site amenities such as a canteen, TV, showers and terraces.

The main benefit felt by the workers was that they felt safe and respected on the company's site, which helped to raise their self-esteem and made them feel appreciated. In addition, working in a clean and safe environment with less risk of injury also has the additional benefit of improved operational and work efficiency.

Case Study

Promoting awareness of subcontractors' health and safety by implementing a dedicated assessment system

A company engaged in real estate development and management committed to driving change in the Singapore real estate industry, has set new benchmarks for environmental, health & safety (EHS) practices amongst industry players, contractors and its supply chain, encouraging tracking and disclosure of EHS data and promoting workers' well-being. Even though the company does not employ workers directly, it works closely with contractors to care for workers' working and living environment, safety and health. It pioneered a '5-Star EHS assessment System' in 2001 and expanded it to include an annual award in 2005 to recognise contractors and consultants who deliver good EHS performance. In recent years, penalties have been added to raise accountability of builders who commit safety infringements.

The system adopts a comprehensive, audited and appraised approach towards EHS performance involving all its main contractors who represent their subcontractors and suppliers downstream along the supply chain. Every three months, the company holds quarterly 5-Star EHS seminars for its builders to present their EHS data in a transparent manner. All data undergo inspections and audits conducted by an independent audit firm recognised by the Ministry of Manpower. Builders are appraised on a scale of one to five stars and the most outstanding builders are recognised with the 5-star EHS Award at an annual award ceremony.

Through peer-learning and healthy competition, the company has successfully promoted the sharing of best practices as all developers share the same pool of contractors. The builders' adoption of EHS best practices required by the company has helped raise the EHS standards across the industry.

The seminars provide **an invaluable learning opportunity** for those operating in Singapore's construction industry (which engages over 300,000 foreign workers). The assessment system motivates companies in the industry to place a greater emphasis on employee health and safety. **Safer and cleaner work sites have been achieved with the company having an accident frequency rate (the number of accidents/million man hours) of 0.72, significantly lower than the industry average of 2.0.**

Tackling human rights issues in India and China

As part of a Human Rights Impact Assessment (HRIA), a construction materials supplier decided to analyse its supply chain in China and India. Natural stone is a major industry in China, with a total annual turnover of over US$15 billion. Production methods vary widely in the industry across the country, and the supply chain of natural stone products in China is very complex. Between 1950 and 2005, China has had more than 650,000 reported cases of silicosis, an incurable lung disease caused by inhalation of dust containing free crystalline silica (a common mineral found in sand and rocks) – the same as the total number of cases reported in the rest of the world.

In India, the company found a lack of authoritative research and statistics – either official or non-governmental – documenting the upholding of human rights in the district of Kota or the wider state of Rajasthan, an area key to its operations. Having researched and consulted various sources of information, the company formed the objective to identify the core human rights concerns and other issues affecting the communities in Rajasthan.

The company sought to assess whether and how its activities in India and China affect the human rights of the individuals employed in the supply chains connected to its operations, as well as those in the wider community, and how it could better engage with those people to further their human rights.

As a result of its HRIA, the company, among other things, is striving to work more closely with its suppliers in China to **deliver stone in accordance with strict ethical criteria** and as part of its local community engagement has **secured the opening of six schools in Rajasthan for the children of all local quarry workers, whether employees of the company's Indian supplier or not**.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- The Labour Principles of the United Nations Global Compact – A Guide for Business
- Addressing the Retention of Identity Documents
- ILO Helpdesk for Business on International Labour Standards
- Children's Rights and Business Principles
- Child Labour Platform
- A Guide to Traceability: A Practical Approach to Advance Sustainability in Global Supply Chains
- ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy
- Combating Forced Labour: A handbook for Employers and Business
- Inclusive Sourcing
- UN ODC Toolkit to Combat Trafficking in Persons
- ILO Report on Health and Life at Work: A basic human right
- From Poor Working Conditions to Forced Labour – What's Hidden in Your Portfolio
- Decent work, the key to the 2030 agenda for sustainable development
- Sustainable Development Knowledge Platform, Goal 5
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 16

3.2.4 Environmental stewardship

Relevant for implementing SDGs:

According to a UN Global Compact strategic guidance document for corporate leaders "*Environmental Stewardship is defined as the comprehensive understanding and effective management of critical environmental risks and opportunities related to climate change, emissions, waste management, resource consumption, water conservation, biodiversity protection and ecosystem services.*"[21]

Natural resources include not only air, fresh water, land, bio-habitats and living organisms that can be found within the environment, but also non-renewable resources such as metal ores, crude oil and gas.

The physical development of land (and water) resources can have a wide range of direct and indirect effects on ecosystems, bio-diversity and vulnerable local communities; this includes the over-exploitation of resources and toxic pollution, causing flora and fauna habitat damage and contributing to climate change as well as increased exposure to environmental risks (e.g. hurricanes, floods, landslides). The mismanagement of natural resources also negatively affects families, communities and countries. Marginalised groups such as indigenous people, who heavily depend on natural resources for their daily livelihoods, such as food production, are often most severely affected.[22]

Developers may not always build with the protection of the environment and resource efficiency in mind and may not give sufficient consideration to both the short-term costs for the end user, through for example higher energy and water bills, and to the long-term costs to society.

With regard to the issue of environmental stewardship, key points of consideration are: natural resources consumption, energy conservation, choice of materials, biodiversity, waste and illegal dumping.

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of environmental stewardship, companies are encouraged to:

Take responsibility with regard to the environment at the point of land status change and at the planning and design stage

- **Companies should** investigate the possibility of brownfield rather than greenfield development to ensure efficient use of land.

- **Companies should** adopt land development and state-of-the-art soil management practices that protect existing biodiversity, enhance regeneration of biodiversity and facilitate sustainable natural resource management, whether of land, fisheries or forests.

- **Companies should** design new buildings and surrounding infrastructure for sustainable and more efficient use of land in urban areas. This could include planning for walkability, giving access to the public realm, narrower roads and fewer parking spaces, thus promoting more sustainable life-style choices.

- **Companies should** carry out early environmental impact assessments during the planning and design process. Environmental impact assessments should:

  – consider climate change mitigation and adaptation options in terms of location, positioning and design of the building and the building systems;

  – include an adequate analysis of expected in-use energy consumption and related greenhouse gas (GHG) emissions explore measures aimed at the minimisation of embodied water, energy and carbon of construction elements;

  – consider the reduction of in-use energy up to 'near' passive performance, cost efficient carbon reduction through the implementation of holistic renewable strategies and reduction of embodied energy and carbon;

  – consider the impact on biodiversity;

  – analyse how reused, recycled and bio-degradable content can be maximised;

  – take into consideration holistic water management principles (e.g. rainwater harvesting, soil water absorption capacity, grey and black water treatment and reduction in potable water use);

  – Consider the impact of the choice of location on the local environment, including transportation, infrastructure and hazard exposure.

- **Companies should** choose responsibly sourced green construction materials that can be characterised as being non-hazardous materials, minimising the use of depleting mineral resources through the use of reused, recycled and renewable material content and seek to reduce the embodied impacts related to energy, waste, carbon and water.

- **Companies should** ensure that their own responsible resource management practices extend to their suppliers and contractors and should confirm that the entity taking receipt of their waste is properly licensed to do so.

- **Companies could** consider carrying out a full Life Cycle Assessment (LCA) during the design stage in order to assess different project alternatives to support decision-making (the principles and framework for LCA are described in ISO 14040[23]). LCA takes into account all energy and mass flows along the life cycle of a building and aims at describing, assessing and influencing resulting consequences for resource use as well as associated impacts to the local and global environment. In order to minimise energy and mass flows as well as resulting impacts several possibilities exist: e.g. minimisation of transport, use of locally sourced and environmentally friendly materials, durability of construction, etc. In order to carry out LCAs, companies need to request Environmental Product Declarations (EPDs) from their suppliers. Companies could also impose prescribed targets for product optimisation and for minimising environmental impact on their suppliers since these issues are relevant to such supply chain considerations. Ideally, LCA is coupled with / complemented by Life Cycle Costing (LCC) since this would allow companies to simultaneously have environmental as well as economic information on different project alternatives at hand at the point of decision making.

- **Companies could** provide appropriate training and undertake wider advocacy efforts in relation to workers, suppliers, subcontractors and members of the community especially to those in small- and medium-sized enterprises to consider the environment in their daily working practices.

Benefits and opportunities relating to environmental stewardship:

Envisaging responsible resource management measures at the planning and design stage and subsequently implementing these measures during the construction process is easier and more cost-effective than implementing such measures post-project completion.

Environmental stewardship that treats natural resources as assets that need to be carefully managed (e.g. by applying LCA to minimise environmental impact) has the following additional benefits:

☑ Compliance with existing and foreseeable regulatory frameworks

☑ Reputation and image gains

☑ Lower insurance premiums

☑ Product innovation

☑ Resource protection and security of future supply of raw materials

☑ Disaster risk reduction

☑ Contribution to health and well-being of communities and workplaces

☑ Safe-guarding of bio-habitats and biodiversity

☑ Climate change mitigation

☑ Contribution to intergenerational equity
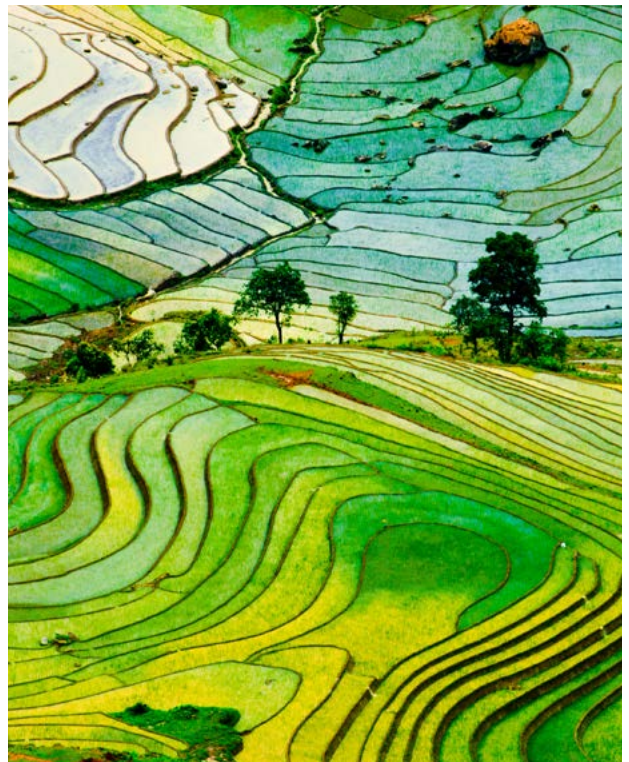
Case Study

Using modular building to maximise productivity and reduce waste in the construction process

In line with its firm commitment to 'conserve as it constructs', a Singapore listed real estate company adopted a game changing building technology in 2014 for a large condominium with 638 apartment units. Called the Prefabricated Prefinished Volumetric Construction (PPVC) method, it is the first time that this type of system was adopted in Singapore. Involving some 5,000 building modules, it is likely the largest application of PPVC in a residential project in the world. This technology will achieve a much cleaner and safer worksite than would be possible using conventional building methods.

Adopting this technology enhances worksite safety as prefabrication of the building modules in factories means fewer workers onsite (which in turn leads to fewer accidents and less downtime). It will also result in a **cleaner worksite by generating less waste**. In addition, sequential construction will **enhance quality** as stringent quality control in factories ensures uniform and superior quality of prefabricated components, and reduces wastage of materials onsite.

Employing modular building methods not only reduces the environmental impact of the development, it will also raise productivity for the developer given the important consideration of a labour-tight industry in Singapore. **The modular construction involves the use of prefabricated bathroom units which normally yields productivity improvements of up to 80%, compared to the conventional method of constructing bathrooms onsite which requires more wet work**.

The company estimates that using PPVC building technology will achieve overall productivity gains of 40% and will save approximately 55,000 man days. As a result, construction of the project is expected to be completed four months ahead of schedule. The company's commitment to green building and sustainability has helped put its name on the global map of sustainability. It is included in the world's leading sustainability benchmarks such as the FTSE4Good Index Series, the Dow Jones Sustainability Indices, the GC100 and is also listed as one of the Global 100 Most Sustainable Corporations in the World.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Environmental Stewardship Strategy
- IFC Excellence in Design for greater Efficiencies: Build Green
- Sustainable Real Estate Investment: Implementing the Paris Climate Agreement: An Action Framework
- Global Alliance for Buildings and Construction
- World Bank Land Governance Assessment Framework
- Global Biodiversity Outlook 4
- Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 7
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 14
- Sustainable Development Knowledge Platform, Goal 15

3.2.5 Quality of planning, design and construction

Relevant for implementing SDGs:

1 NO POVERTY

3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

The safety of buildings is absolutely paramount. Lack of enforcement of safety standards and use of poor or illegal construction materials or practices are critical issues for development companies. Cutting corners on safety and quality of buildings can have serious repercussions.

When problems with dangerous structures come to light (such as a building collapse) the resulting impact on human life can be devastating and often receives international attention, causing reputational damage to the companies involved, including down- and upstream users. In addition, companies involved in the design and construction of such buildings may also face litigation and insurance and compensation claims.

The use of toxic materials in construction may harm local communities, particularly the elderly, children and childbearing women.

With regard to the issue of quality of planning, design and construction, key points of consideration are: materials, safety reports, building codes, resilience

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of quality of planning, design and construction, companies are encouraged to:

Deliver safe, high-quality and well-designed buildings

- **Companies could** ensure that any building constructed is safe, fit for purpose and of good architectural quality.
- **Companies should** ensure that buildings have been constructed to safely sustain reasonably foreseeable loads and impacts, including ground movement, weather events, fire, and seismic movements and future impact of climate change, applicable to the building's potential future use and local geographical factors (particularly in regions that are commonly affected by natural disasters).

- **Companies should** ensure that sites are free of contaminants and other geo-technical hazards that might damage the building, affect its stability or be a health or safety hazard to occupiers, neighbours and communities in the vicinity.
- **Companies should** apply local and, where appropriate, international building codes and local planning regulations (and, where feasible, quality and environmental management standards, such as ISO 9001[24] and ISO 14001[25]) incorporating best-practice structural and safety standards, particularly in areas where technology has been subject to new developments, such as improved seismic/earthquake criteria, drainage design standards, hurricane design standards, fire safety access, and material performance measures. Codes are minimum requirements. Companies should strive to go beyond building codes, green building rating programmes and other guidance in the development of their built assets.
- **Companies should** carry out a sustainability assessment of the planned building through either national or commercial assessment tools and/or methodologies in order to evaluate the optimal design solution in terms of economic, social and environmental benefits as well as a means of quality-assurance during the design and construction process.
- **Companies should** plan for the likely uses (and abuses) of the building by future occupiers and ensure that safety standards are adequate in that context. Design and choice of materials should allow for future adaptability to accommodate changing user preferences and to allow for a significant change of use without major construction taking place. Typically long-life buildings are achieved by adopting a layered and modular approach, clear spans, high ceilings and easy access to building services.
- **Companies should** commission, design and construct with future refurbishment and recyclability of the building and its components in mind so as to minimise waste impact and waste disposal costs during the Recovery Phase.
- **Companies should** build in design features aimed at improving the well-being of future occupants within the building, for example, provision of adequate levels of light, indoor air quality, common areas, etc.
- **Companies should** check before entering into contractual agreements that the construction industry professionals they are employing are adequately qualified and knowledgeable, that there are mechanisms in place to provide them with continuing professional development and that those who commit malpractice or grant approvals which exceed their professional competency cannot continue to practice.

- **Companies should** put in place mechanisms to verify that any mistakes/poor judgement in relation to building quality and safety (or, in the worst cases, deliberate failings) will not go undetected. This might include the collaboration with trade unions for the protection of whistle blowers.

- **Companies should** seek and promote dialogue with end users by consulting and engaging with stakeholders down the value chain from the very beginning of development as this will facilitate feeding back user expertise and experience into the overall planning, design and construction process and will also raise overall building quality and performance. This could be achieved through:

  - establishing multi-disciplinary teams that would include facility or building control managers;

  - carrying out a post-occupancy assessment;

  - adopting the so-called 'soft-landings' approach, involving a formal handover process to the owner/user upon project completion, ensuring that all construction related data is made available to the owner/user for an efficient operation of the building in the Real Estate Use Phase;

  - providing the end user with a performance guarantee.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- ILO Convention concerning Safety and Health in Construction, 1988 (No. 167)
- ILO Training package in occupational safety and health for the construction industry
- Greening the Supply Chain
- UN Environment SBCI resources
- UN Environment Finance Initiative Property Working Group resources
- Safety and health in construction. ILO Code of Practice
- ILO Evaluation Programme – Construction Action Programme
- Sustainable Development Knowledge Platform, Goal 1
- Sustainable Development Knowledge Platform, Goal 3
- Sustainable Development Knowledge Platform, Goal 7
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13

Benefits and opportunities relating to good quality planning, design and construction:

☑ Adhering to good practice procedures in construction provides companies with the opportunity to tender on a level playing field

☑ The cost of insurance will likely decrease through improved construction quality

☑ Buildings are more likely to be safe for future occupants and users and ensure the longevity of an extremely expensive investment

☑ Incorporating adaptation considerations into the overall planning and design process can help to avoid damage to the building through climate change related effects and help to ensure long-term user comfort in the event of changes of weather and climate patterns. Ultimately, this should mean less maintenance and retrofitting will be required in the future

☑ Adopting an integrated design-use approach in collaboration with building users and/or facility managers ensures that valuable user experience and preferences are directly fed into the design and construction process, helping to maximise efficiencies and to avoid mistakes that may require additional investment during building operation

☑ The volume of waste going to landfill and waste disposal costs at the end of life of a building also can be substantially reduced if adequate consideration is given to future recyclability at the design stage

☑ A well-designed and constructed building also is likely to better attract prospective buyers or tenants, will defer the building's obsolescence and may determine whether it will be rebuilt, rehabilitated or demolished at the end of the life cycle.

It should therefore be in the interests of not only those companies operating in the Development Phase but also those active in the Real Estate Use Phase to bring about positive change in this area.

Setting regional standards through whole life cycle thinking and value chain integration

Example 1: Brazil

Wanting to apply its corporate climate programme to its own buildings, a multi-national company decided to build its new headquarters in São Paulo, Brazil, as sustainable as possible.

As with all its construction projects, the company considered whole life cycle costs at the design and planning stage, fully accepting that while energy and water efficient technologies may demand slightly higher initial capital investments at the construction stage, they will have a high impact on the reduction of operational costs during the use phase in the middle and long term.

The São Paulo project delivered:

- a reference green building for the region, completely adapted to the Brazilian climate and culture and based on local resources and high level of integration of stakeholder from all project phases: owner, designers, consultants, green building solutions providers, contractors, users, etc.;

- a net-zero energy building, based on intensive use of passive technologies and use of local natural resources, such as natural ventilation, daylighting and solar power, **reducing the company's annual energy costs by 50% and potable water use by 95% with a 15% additional upfront investment against a payback period of only 8 years**;

- a high quality project for environmental education on best practices in green building.

In recognition of best practices on green building, the building became the first in the country to be awarded the highest rating by an international commercial sustainable building certification system. It became also the country's first zero-energy building and had more than 1,000 visitors (professionals and students) during the first year of operation, showcasing the company's innovative building materials and therefore also potentially winning new customers.

Case Study

Setting regional standards through whole life cycle thinking and value chain integration

Example 2: United Arab Emirates

With the aid of a building and sustainability consultant, a fertilizer producer designed and constructed user- and eco-friendly buildings in the UAE that complied with the guidelines and requirements of a regional building rating system that is tailored to address local meteorological, demographic and planning factors.

2 of the 6 buildings are first of their kind to be awarded the local 3 Pearl Sustainability Rating: a mosque and a spare parts warehouse. The chemicals warehouse will be the second of its kind

Meeting such standards presented only a 1-2% increase in project costs and the actual construction costs of the project were much lower than initial estimates. Furthermore, the new buildings have presented the company with higher energy and water savings (30% and 40%, respectively, over the baseline), as well as reduced costs due to the use of higher durability building components. The running cost saving over the life expectancy of the buildings is expected to reach 26% over the baseline in light of these aspects of the buildings' design and construction.

4.0 The real estate use phase

4.1 Introduction

The **Real Estate Use Phase** represents the second phase of the life cycle and comprises the period from the initial occupation of a building throughout the duration of its use, operation and maintenance. The management of a building plays a central role as a poorly operated and maintained building will inevitably require extensive refurbishment or demolition at a much earlier stage than will a well-operated and maintained one.

However, while this chapter is aimed primarily at those companies that operate in the Real Estate Use Phase and real estate users, all companies, including developers and constructors who establish the initial infrastructure should pay close attention to the issues outlined below.

Business stakeholders within the Real Estate Use Phase include real estate investors, fund and asset managers, landlords, tenants (such as corporate occupiers), facility managers and other real estate service providers (such as brokers and valuers).

The business stakeholder community within the Real Estate Use Phase is much broader than in the Development Phase with many organisations occupying and using real estate space in one form or another (for example, as offices, retail outlets, hotels, industrial hangars, warehouses, etc.).

With consumer awareness and scrutiny on the rise, it is those companies occupying buildings with direct end-consumer interaction that are likely to be most scrutinised for any irresponsible business practices.

Figure 4.1 — The impact of the Real Estate Use Phase on the issue areas

Dark colour: high issue area impact
Light colour: low issue area impact

- Human Rights
- Labour
- Environment
- Anti-Corruption
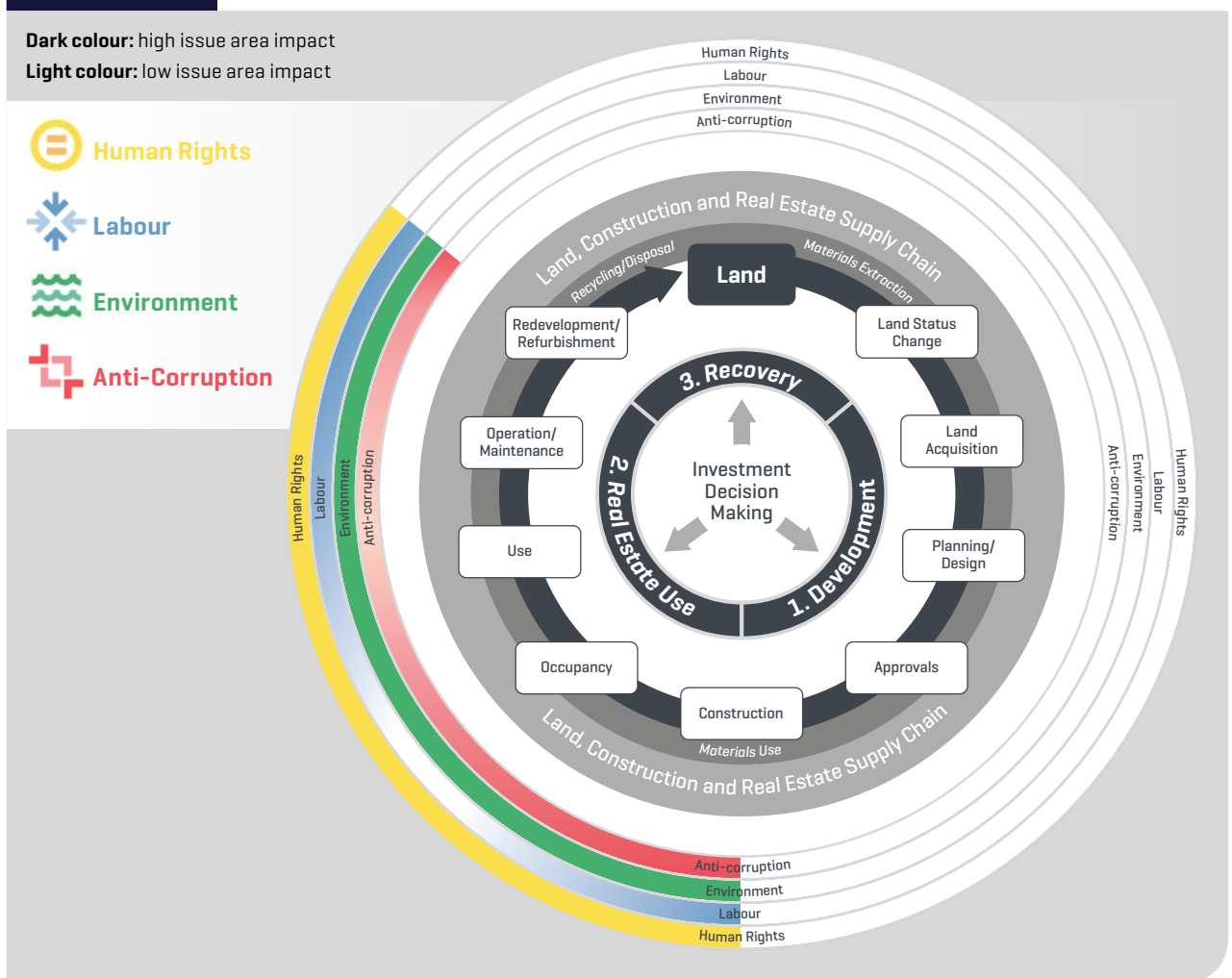
As indicated by Figure 4.1, human rights and environmental issues play a central role in the Real Estate Use Phase but anti-corruption issues and labour rights are also of importance, the former specifically at the stage of occupation, the latter during use, operation/maintenance and particularly during the refurbishment process.

While Figure 4.1 illustrates the impact of the individual stages within the Real Estate Use Phase on the issue areas, Figure 4.2 highlights the five key issues identified by sectoral stakeholders as critical for the Real Estate Use Phase due to their significant impact on the issue areas.

Figure 4.2 **Real Estate Use – Five key issues and stakeholder relevance**

▲ Developers/constructors ▼ Planners/designers ● Investors ■ Occupiers/users ◆ FM Managers ★ Demolition/recycling specialists
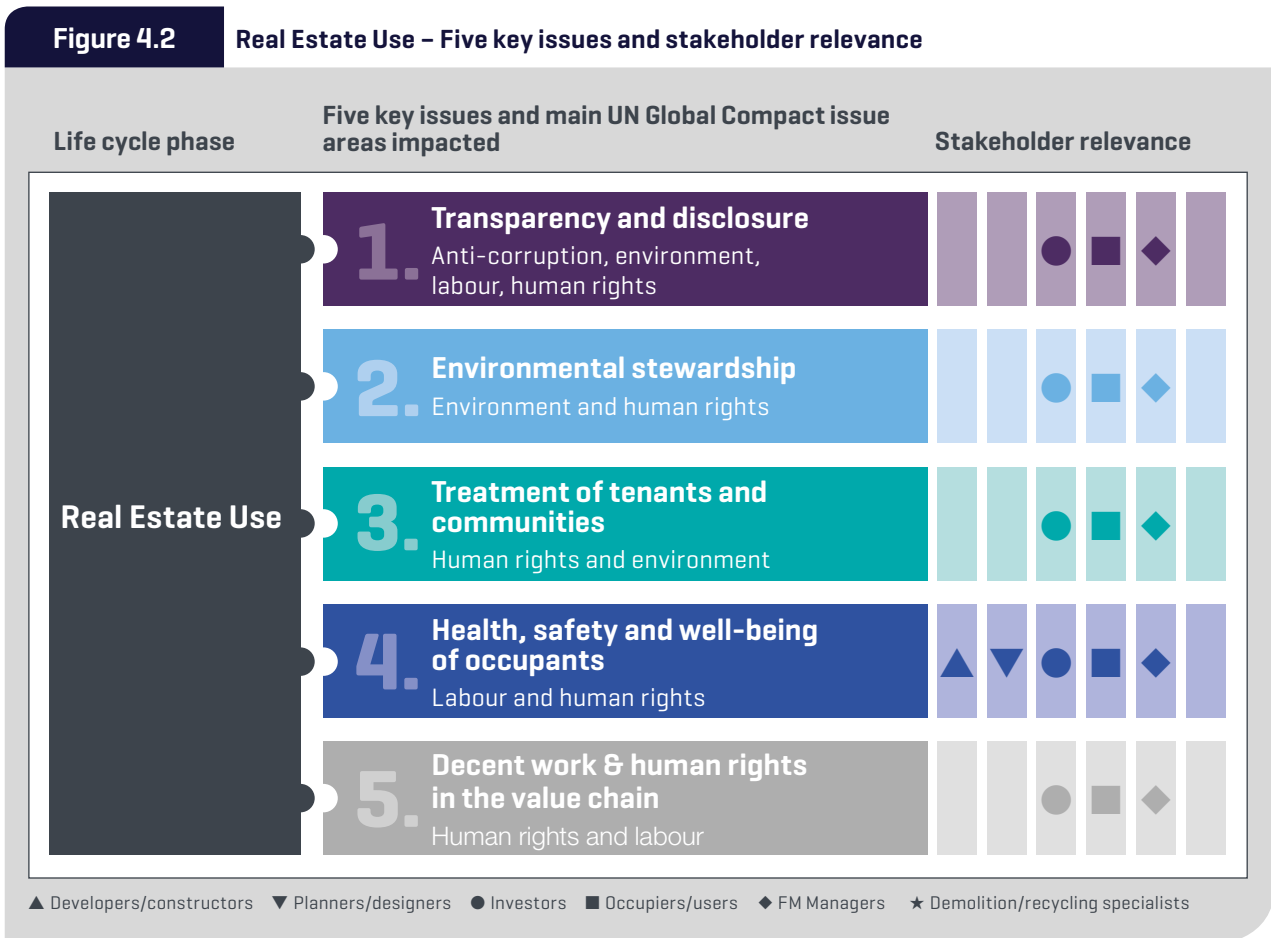
4.2 Five key issues, action items and associated benefits

4.2.1 Transparency and disclosure

Relevant for implementing SDGs:

A transparent real estate market can be characterised as one that is open and operates within a clearly organised regulatory framework capable of enforcing rules and regulations as well as respecting private property rights.

It also is free from corrupt practices where investment decisions are based on readily accessible information, including comprehensive transaction, lease, and building performance data (including physical building characteristics and in-use operational data).

A lack of performance data in particular can dissuade investment by making expected return uncertain. This may in turn lead to under-investment in overall sustainability within the sector as robust data is needed to be able to articulate and strengthen the business case for investment into sustainability aspects. This is critical for developments that are designed on sustainable grounds where adequate data demonstrating the actual benefits captured through the sustainable design approach should form a key element of the 'sales pitch' for that development.

Lack of transparency in the Real Estate Use Phase is aggravated in regions with a weak regulatory framework and ineffective enforcement mechanisms and also in countries that, despite having adequate legal systems in place, do not foster a transparent business culture.

Where a company's compliance policy does not extend to its suppliers, transparency within the supply chain is often threatened by corrupt practices.

With regard to the issue of transparency and disclosure, key points for consideration are: *money laundering, ineffective decision-making, undermining of investor confidence.*

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of transparency and disclosure, companies are encouraged to:

Improve internal processes for identifying and addressing corrupt practices and for increasing overall transparency

- **Companies should** carry out a risk assessment and due diligence related to corrupt practices, such as money laundering, to prevent engagement in criminal activities.

- **Companies should** put in place robust internal anti-corruption compliance programmes and whistle-blower policies to help reduce corrupt practices.

- **Companies should** conduct anti-corruption training sessions for employees and their contractors, suppliers and clients.

- **Companies should** extend their anti-corruption compliance policies to their suppliers and put deterrents to non-compliance in place where possible.

- **Companies should** create a transparent framework of requirements for type, extent, format and frequency of building data/information handling. Contractual arrangements whenever real estate services, such as facility management, are outsourced should be amended accordingly.

- **Companies should** take a holistic approach to handling building data/information at all corporate levels. This can be achieved by undertaking effort to implement a Corporate Real Estate Sustainability Management (CRESM) system, which can be defined as the integrated management of all economic, environmental and social aspects of an organisations' real estate activities and associated investment decision-making.

- **Companies should** report real estate performance data as well as progress on how they integrate the four UN Global Compact issue areas (anti-corruption, environment, labour, human rights) with regard to the Real Estate Use Phase. This can be done either against The Construction and Real Estate Sector Supplement of the Global Reporting Initiative (GRI CRESS)[26], within a standalone annual sustainability report or as part of an integrated financial reporting.

- **Companies could** evaluate facility and asset managers' performance against responsible business targets.

- **Companies could** ensure, whenever external consultants / real estate professionals are engaged, that they have adequate skills and knowledge of responsible business in relation to real estate use, operation and investment.
- **Companies could** benchmark their facilities to determine the level of performance relative to peer buildings.
- **Companies could** engage in collective action including sector-wide or regional initiatives to collaboratively fight corruption and increase real estate market transparency.


Benefits and opportunities relating to transparency of practices and sharing of information:

☑ More informed investments and policy decisions within companies

☑ The 2014 Sustainability Metrics report by the Property Working Group within the UN Environment Finance Initiative[27] noted an increased demand for performance information driven by:

   – reporting and accounting obligations

   – an increasingly open data culture

   – stakeholder and peer-group pressure lead by real estate valuation professionals and other analysts

   – the need to comply with sophisticated building codes and standards

☑ Increased demand for transparency and improved data management has the potential to reduce the scope for corrupt practices, creating a level playing field amongst companies

☑ A better understanding of transaction and building performance data will make it easier to communicate the business case for 'triple bottom line' investments that take into account all three pillars of sustainability, thus improving overall sustainability in real estate.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Sustainability Metrics – Translation and Impact on Property Investment and Management
- An Anti-Corruption Ethics and Compliance Programme for Business: A Practical Guide
- A guide for anti-corruption risk assessment
- Promoting Collective Action through Global Compact Local Networks
- Business against Corruption – a Framework for Action
- Fight against Corruption: E-Learning Tool
- Fighting Corruption in the Supply Chain: A Guide for Customers and Suppliers
- Anti-Corruption Ethics and Compliance Handbook for Business
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 16
- Sustainable Development Knowledge Platform, Goal 17
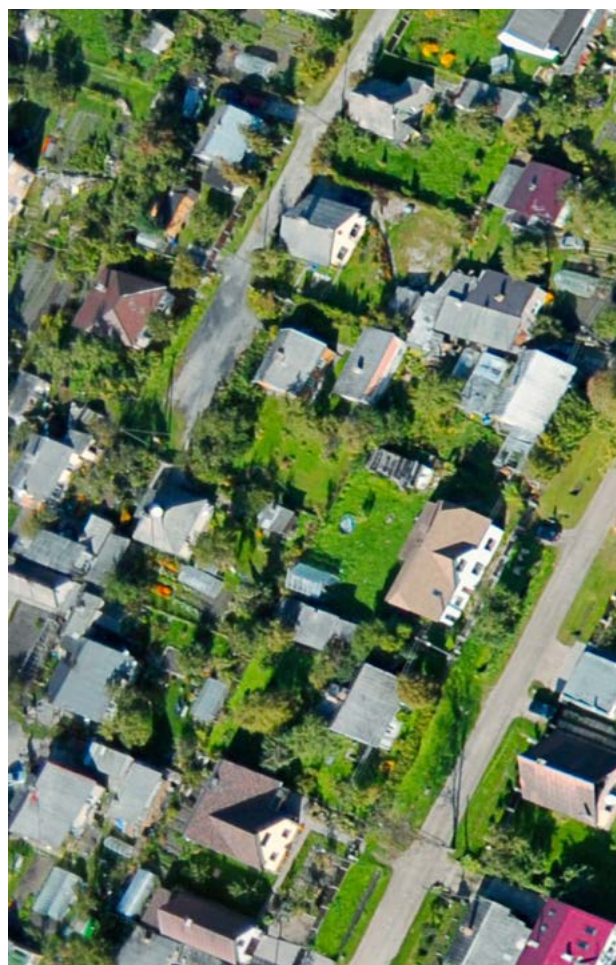
Creating improved market transparency through ESG reporting and benchmarking

As part of the development of its Responsible Property Investment programme, an investment company identified a clear need to increase transparency in the real estate sector. It realised that for this to happen, **more comparable, public reporting of risks and performance** was needed in addition to the development of sustainability benchmarks to enable readily comparable presentation of the impact of sustainability on the financial business case as well as the risks with regard to market fundamentals.

As a first step, **the company made assessing and understanding ESG risks part of its standard investment processes**. Having initiated the ESG assessment process, the company started to annually report to its clients and to the wider industry its understanding of ESG risks, how it was mitigating them and how it was taking advantage of the opportunities this was creating.

After creating its first internal sustainability benchmark, the company helped to set up a number of industry sustainability benchmarking initiatives. These benchmarks enable the company to:

- **understand real operational performance year on year** against annual industry comparison, which helps to pinpoint action areas for improvements. The company uses this tool within its internal cost benefit analysis to identify the most cost effective improvements for a given asset and to integrate this into the asset business plan in line with its investment life cycle;

- **benchmark the sustainability performance and risks to which its real estate funds and portfolios are exposed** compared to its peers.

The company has seen **major benefits** from implementing a broader programme of transparency, comparability and reporting across its portfolio and throughout the industry:

- **Improved ability to manage risks and to capture opportunities to improve its long term performance;**

- **Improved transparency and comparability across the market is enabling asset owners to better engage with their clients on the implementation of the Principles for Responsible Investment[28];**

- **Growing interest from clients, with ESG integration being assessed early during the investment manager selection process.**

Case Study

Actively addressing the risks of money laundering and bribery in real estate investment

To manage and address risks from exposure to bribery and corruption a real estate investment company has established a comprehensive approach across its governance systems. As a key part of this, the company has established a 'Code of Ethics', which has been approved by the board, and which sets out the minimum expectations the company has towards its employees, partners or contractors. Supporting the code, a number of policies directly address any risk exposures arising from bribery and corruption:

- The Financial Crime and Anti-Money Laundering Policy

- Gifts and Hospitality Policy

- Whistle-Blowing Policy

- Conflicts of Interest Policy

- Procurement Policy

- Errors and Breaches Policy

- Expenses Policy

The following systems and procedures are in place to facilitate effective implementation of the company's bribery and corruption policies:

a. **Risk assessment:** carried out at least annually, or at any time the risk of bribery is deemed to have increased; several sources are consulted including Ministry of Justice and FSA guidance as well as Global Corruption Indices;

b. **Due diligence at employee level:** all employees are expected to conduct the company's business in full compliance with both the letter and the spirit of the law and any other policies and procedures that may be applicable; all employees attest to complying with all the policies and procedures on an annual basis; any aspects falling under 'Financial Crime' would be investigated by the Risk Team and reported to the relevant Executive Committees, as per the 'Errors and Breaches Policy';

c. **Employee training programme:** compliance induction for employees includes training on 'Financial Crime' and anti-bribery; specific training for individuals deemed to be in higher risk roles; additional online training is also available to all staff;

d. **Due diligence at procurement level:** all contracts with third parties require compliance with applicable laws, including the UK Bribery Act and are subject to a respective due diligence process.

4.2.2 Environmental stewardship

Relevant for implementing SDGs:

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

15 LIFE ON LAND

The Real Estate Use Phase has a significant impact on the environment and climate change through natural resource consumption, carbon emissions and waste generation.

Resource consumption modelling at the design and construction stage within the Development Phase usually does not take into account the way the building will be used (e.g. operational hours and number of occupants), often leading to discrepancies between projected and real consumption.

Environmental stewardship relies on data and data management and is thus directly linked to the issue of data availability and disclosure and transparency within organisations, particularly with regard to improved performance data of buildings and portfolios.

With regard to the issue of environmental stewardship, key points for consideration are: energy consumption and carbon emissions, water management, waste management

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of environmental stewardship, companies are encouraged to:

Make environmental stewardship an integral part of the daily operation of the building

- **Companies should** contractually require information from the landlord or seller and real estate professionals involved in the sale or rental of a building as to whether there are any specific environmental issues affecting the property before signing contracts.[29]

- **Companies should** make resource efficiency and monitoring an integral part of facilities management, whether in-house or outsourced. This could be achieved, for example, through adoption of ISO 50001[30] for energy and/or ISO 14001[31] for general resource consumption in operation. This will help to provide the company with options, costs, savings potentials and paybacks.

- **Companies should** include resource efficiency as a core criterion when entering into new procurement contracts or when renegotiating existing ones.

- **Companies should** introduce operating procedures that minimise the use of energy and water.

- **Companies should** adopt a maintenance strategy that includes modern, energy efficient lighting fittings, motion-controlled lighting in common areas and low-flow water plumbing and taps.

- **Companies should** investigate the feasibility of their buildings becoming self-sufficient, in other words creating and producing as much renewable energy on site as possible, for example through the installation of solar panels, wind turbines or through waste re-use, etc.;

- **Companies should** avoid unnecessary waste from refurbishment at the time of vacating the premises at the end of a lease. Building fit-outs should be recycled and whenever feasible and appropriate, new tenants should be offered to take over the improvements and fit-outs made by the previous tenant.

- **Companies should** take practical steps to reduce daily waste from business activities within the building.[32]

- **Companies could** optimise resource use by capturing consumption data. As a first step, this involves the installation of meters to measure and control energy consumption by asset/location/department and service/activity. In a next step, this could involve:

  - a Building Management System, a computer-based control system installed in buildings and/or

  - Building Information Modelling, a process which involves the generation and management of digital representations of physical and functional characteristics of buildings.

- **Companies could** adopt an overall Environmental Management System for all of their daily operations, setting out clear targets and key performance indicators to measure individual departments' and subsidiaries' performance across the company.

- **Companies could** support life-cycle optimisation of financial and environmental performance through total cost of ownership (TCO) budgeting.

- **Companies could**, when renting or leasing a building, investigate the possibility of integrating environmental clauses into lease contracts ('green leases') that not only provide for the sharing of data between landlord and tenant but also for the sharing of benefits and interests in implementing sustainability measures (to overcome the split incentive issue).

- **Companies could** raise awareness about resource consumption issues by displaying real-life energy and general resource consumption and/or carbon footprint onscreen in areas frequented by employees and clients.
- **Companies could** opt for landscaping solutions that reduce water usage (e.g. by using native plants that survive without extra watering) and that enhance biodiversity.
- **Companies could** set up resource or 'green' teams across departments and make environmental stewardship an integral part of employees' performance reviews to enable regular resource use audits and implementation across the organisation. This allows the organisation to evaluate progress, set new goals and continually improve.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Environmental Stewardship Strategy – Overview and Resource for Corporate Leaders
- Global Alliance for Buildings and Construction
- Common Carbon Metric -Protocol for Measuring Energy Use and Reporting Greenhouse Gas Emissions from Building Operations
- Global Alliance for Buildings and Construction
- Sustainable Real Estate Investment: Implementing the Paris Climate Agreement: An Action Framework
- UN Global Compact Cities Programme: Green Tenant Toolkit
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 7
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 15

Benefits and opportunities relating to environmental stewardship:

In a commitment to improving energy efficiency reducing carbon emissions and to meeting regional and country specific targets, a number of regulatory demands have been placed on businesses. These demands are not only targeted at disclosure of energy consumption/carbon emissions of buildings but also at committing businesses to taking active steps to make their existing buildings more efficient.

Advantages of environmental stewardship include:

☑ identifying cost saving potentials with regard to the building's operational costs, thus increasing revenues (e.g. reduction of energy and water bills, cost, labour, time and storage savings as a result of waste reduction, etc.)

☑ attaining enhanced occupancy levels, tenant retention, rents and financial performance for leased real estate

☑ reducing the risk of non-compliance with regulatory frameworks, especially with minimum resource efficiency performance standards

☑ reducing the risks of potential future building obsolescence as the demand for 'green' buildings becomes a mainstream requirement

☑ helping to ensure future resource security

☑ maintaining biodiversity on site thereby also adding commercial value through pleasing appearance

☑ driving innovation and creating new business opportunities and business models

☑ building a reputation as a sector leader in resource efficiency (linked to overall Corporate Social Responsibility recognition potential amongst employees, clients and neighbouring communities)

☑ avoiding further exacerbation and cost of climate change related impacts

☑ improving air and water quality, resulting in improved population health

☑ inter-generational equity through safe-guarding of natural resources for the future

☑ creating new job opportunities through the development of new green technologies, services and products.

Continuing a site's sustainable development and design vision through operational building performance initiatives

A global building management company took over the operation of a new award winning development in Sydney, Australia. In line with the development's sustainable design and construction vision, a comprehensive operational programme was put in place and implemented to ensure that the development's use phase is a continuation of the developer's vision.

The environmental stewardship of the site's facilities management includes a number of overarching strategic and capacity building initiatives:

- The implementation of ISO14001 Environmental Management System procedures;

- The development of an Operational Building Users' Guide to help tenants' representatives understand the building systems and expected tenant behaviour;

- The engagement of an Independent Commissioning Agent to periodically re-commission building systems to operate optimally;

- The development of a Sustainable Procurement Policy to guide purchasing of replacement equipment and materials used on the site;

- A contractual commitment to provide 'Green Cleaning' services and training for cleaning staff in environmentally sustainable work practices;

- The provision of sustainability training undertaken by the building manager through ongoing workshops with key staff to progress sustainability initiatives; and

- A commitment to monitor energy, water, waste, and indoor environment quality and to report results to stakeholders monthly.

The building management team are running an extensive energy and water efficiency programme for the site that covers:

- Extensive electrical sub-metering of the base building services and tenancy lighting and power loads;

- Efficient low energy lighting and with office lighting zones being less than 100m², reducing after hours energy consumption, because only the lighting zone required stays switched on, while the rest of the floor can be switched off;

- **A reduction in peak electrical demand consumption of the building through use of a tri-generation system (up to 41% reduction compared with the Green Building Council of Australia's Office building benchmark);**

- On-site solar photovoltaic array (10.4kWp);

- The installation of water metering and leak detectors on all major water uses (such as the cooling towers);

- **Reduction of water consumption by the cooling towers by achieving six or better cycles of concentration** (cooling towers typically consume the vast majority, i.e. 80%+ of water used in office buildings);

- 'Sewer mining': sewage water is harvested and treated by an on-site Recycled Water Plant. The treated water is used throughout each of the buildings for non-potable requirements, such as toilet flushing, cooling tower make-up water and on-site drip system irrigation in landscape features;

- The Reduction of water discharge to the sewer system through the use of water efficient fixtures and fittings and the use of recycled water in the building's plant, such as the cooling towers;

- Rainwater collection for irrigation of the public domain landscaping;

- The implementation of a Stormwater Management Plan; and

- The Diversion of potable water to the storm water tank when conducting periodic fire testing, meaning that there is no water wasted by the fire system.

Through all these measures the building management team is successfully maintaining a 5.5 Star Base Building Energy rating, a 5 Star Energy rating as well as a 5 Star Water rating for the tenancy.

4.2.3 Treatment of tenants and communities

Relevant for implementing SDG:

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

16 PEACE AND JUSTICE STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

Treatment of tenants:

Tenants have rights and these rights are protected by the law in most countries. Nevertheless, a lot of tenants are subject to unfair treatment by their landlords.

Some of the main areas of concern are:

- Failure by the landlord to carry out regular maintenance and to fix problems requiring urgent repairs, rendering the rented property and/or its appliances unsafe and unhealthy;
- Arbitrary and unfair rental contracts and unreasonable payment conditions;
- Harassment of tenants;
- Unfair eviction;
- Discrimination on grounds of gender, age, ethnicity, religion, sexual orientation, family situation, disability, social and health status.

Community outreach:

Community outreach can be described as the donation of time and/or resources for the benefit of the community or the community's institutions, such as non-profit civil society or community based organisations, with the overarching aim of improving the quality of life for the community's stakeholders and for the improvement of the local economy.

The presence of any building and its occupants, users and owners regardless of the actual use of the building and its location automatically means that it is part of the community in which it is located. As part of the community, both building owners and occupants have specific responsibilities that require them to interact with the members of that community.

The development of good tenant and community relations requires constructive and regular interaction between companies and tenants and companies and members of the local community.

With regard to the issue of treatment of tenants and communities, key points for consideration are: isolation and lack of inclusion and belonging, unwanted gentrification, discriminating access to and lease of buildings, security

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of treatment of tenants and communities, companies are encouraged to:

Interact with tenants and local communities

- **Companies should** adopt non-discrimination policies with regard to choosing tenants.
- **Companies should** ensure that all rental agreements and contracts are fair and equitable.
- **Companies should** ensure an ongoing, open dialogue with tenants and put in place an adequate grievance process. This could also involve regular tenant-satisfaction surveys and post-occupancy evaluations.
- **Companies should** develop ongoing engagement programmes to increase community communication and involvement and specifically support vulnerable parts of the community including indigenous peoples, ethnic and racial minorities, women, children, the elderly, and persons with disabilities and provide an open consultation process with all community members.
- **Companies should** respect all matters related to cultural and spiritual heritage within the community such as ancestral burial grounds, places of worship, etc.
- **Companies should** ensure, whenever a building has access to the public that all members of the communities can enter the premises regardless of gender, age, race, religion, disability, sexual orientation and ethnicity.
- **Companies could** assist groups, associations and agencies that are working for the good of the community they are located in.
- **Companies could** specify 'local sourcing' as a target under their procurement policy, giving priority both to the employment and occupational development of local community members as well as to the use of local raw materials and the promotion of local processing of such materials.

Benefits and opportunities relating to tenant and community outreach:

☑ A good tenant-landlord relationship leads to improved tenant retention, thus reducing vacancy rates and void periods

☑ The results of tenant-satisfaction surveys and post-occupancy evaluations can serve as 'early-warning-indicators' with regard to the building's capability to meet functional requirements

☑ Having non-discrimination policies with regard to choosing tenants in place can lead to reputation and image gains for landlords

☑ Good community relations help to establish businesses as respected members of the local community which may help to build strategic partnerships with local residents and other businesses in the area and may also help to avoid conflicts with local stakeholders

☑ A sense of ownership by a local community both makes them more likely to use and benefit from new facilities (e.g. a shopping complex) and less likely to treat it with disrespect and let it flounder

☑ A well-functioning community can also lead to a reduction in local crime which may be specifically targeted at real estate located in the area.

☑ Local employment is a valuable way of uplifting surrounding communities.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

• UN Environment Finance Initiative report on owner-tenant engagement

• Community Engagement and Investment to Advance Human Rights in Supply Chains

• ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy and E-learning module

• Sustainable Development Knowledge Platform, Goal 5

• Sustainable Development Knowledge Platform, Goal 8

• Sustainable Development Knowledge Platform, Goal 10

• Sustainable Development Knowledge Platform, Goal 11

• Sustainable Development Knowledge Platform, Goal 16

• Sustainable Development Knowledge Platform, Goal 17

Case Study

Helping communities and tenants to thrive

As part of its responsible business approach, an investment trust based in Hong Kong initiated a charity and community programme that has provided support to 10 community projects and has benefitted 80,000 individuals from 14 districts of the city in its first funding cycle.

To get the programme underway, 15 of the company's employees were delegated as Staff Sponsors to serve as bridges between company and participating NGOs, with an additional 120 staff serving as project volunteers. In addition, the company provided funding and venues.

Some individual project examples:

The community healthy ageing programme for senior citizens aims to promote healthy ageing at the community level by carrying out fall risk assessments and providing fall prevention education to lower the chance of injury for elders at the company's shopping malls. The project also involved occupational therapists visits to homes of high-risk elders.

Number of beneficiaries: 1,000

A child anxiety orientated project targets children's anxiety at the community level. It conducts school talks on children anxiety, and identifies students with high anxiety through questionnaires. Through art therapy groups, lectures and parenting workshops, it teaches students with higher anxiety levels how to deal with stress and enhance positive psychology.

Number of beneficiaries: 1,800 directly and 7,800 indirectly

The mobile 'Playborhood' project provides outdoor playgrounds at some of company's shopping centres by means of a 'Playborhood Truck'. The playgrounds use ordinary household items to design play facilities and activities which inspire children's creativity and to promote parent-child interaction.

Number of beneficiaries: 19,200

The 'School of hip hop' aims to improve young people's self-esteem and self-image through hip hop coaching and outreach services, and in the process reduce the negative influence of street gangs in some of the city's neighbourhoods. It has successfully benefitted both the youths themselves and other members of the community.

Number of beneficiaries: 20,000

In addition to the community programme, the company also offers **tenant lectures and workshops** conducted by market leaders and professionals **with an eye to increasing tenants' competitiveness** by keeping them updated with market trends and valuable business know-how.

4.2.4 Health, safety and well-being of building occupants

Relevant for implementing SDGs:

3 GOOD HEALTH AND WELL-BEING

6 CLEAN WATER AND SANITATION

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

16 PEACE AND JUSTICE STRONG INSTITUTIONS

According to the ILO, **every day, 6,300 people die as a result of occupational accidents or work-related diseases. This translates into more than 2.3 million deaths per year. 317 million accidents occur at work annually, many of which result in extended absences from work**.[33]

The issue of health, safety and well-being of building occupants should already have been considered during the Development Phase as this is when a number of aspects such as the orientation of the building (making effective use of available light) and the choice of materials will be determined.

Given that in OECD countries people spend almost 90% of their life inside buildings[34], the indoor environment plays a significant role in peoples' well-being and health.

Occurrences of physical symptoms (such as skin irritation, hypersensitivity and neurotoxic health problems) generally described as '**Sick Building Syndrome**' are on the rise, having a very **significant impact on a company's overall employee productivity and motivation**. In severe cases, poor working conditions and the exposure to hazardous materials can even harm the reproductive health of occupants.

With regard to the issue of health, safety and well-being of building occupants, key points for consideration are: access for persons with disabilities, access to water and hygiene, indoor air quality

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of health, safety and well-being of building occupants, companies are encouraged to:

Provide a safe and healthy work environment for employees

- **Companies should** put in place policies and processes targeted at health and safety within the building and on access routes to and from the building (including the provision of fire safety routes).

- **Companies should** ensure that statutory health and safety regulations are adhered to both by the company's employees as well as subcontracted staff by holding regular training sessions.

- **Companies should** provide access for people with mobility problems to all parts of the premises.

- **Companies should** provide access to water, sanitation and hygiene facilities for building occupants, especially taking into account the privacy needs of women.

- **Companies should** disclose potential public health risks posed by the building and its operations.

- **Companies should** address potential issues of security and privacy for both men and women and implement a zero-tolerance policy towards all forms of violence at work, including verbal and/or physical abuse and prevent sexual harassment.

- **Companies should** ensure adequate levels of indoor air quality by using products and materials[35] that avoid or minimise the use of harmful toxins and chemicals such as carcinogenic substances and volatile organic compounds, persistent organic pollutants and hazardous chemical substances, through certified sustainable procurement.

- **Companies should** identify the scope for improving working areas such as:
  - increased exposure to natural daylight through consideration of layout and seating plans or by improving light penetration within the building
  - the provision of outdoor recreational green spaces, such as terraces or green roofs
  - the reduction of noise pollution

- **Companies could** encourage and promote walking to work or the use of bicycles by establishing incentive schemes and by providing storage and shower facilities on the premises.

Benefits and opportunities relating to prioritising the health, safety and well-being of building occupants:

☑ From a business perspective, human capital is a company's greatest asset, and in most cases also its most expensive. Employee salaries and expenditures usually represent a large proportion of a company's operational expenses

☑ Indoor environments within housing and workplaces contribute significantly to human health and well-being and offer the potential to cut costs to societies by reducing the need for treatment of allergies, asthma, and Sick Building Symptoms and also costs to businesses from sick leave

☑ Increased worker productivity: according to the World Green Building Council, up to 10-25% better mental function and memory where an outside view is available; 18% productivity increase and a 15-40% increase in retail sales where daylight exposure is provided; 11% productivity increase from better ventilation[36]

☑ Fewer workplace accidents and improved occupant health resulting in a reduction in employee absenteeism due to sickness or stress (reducing the burden on public health systems) and a reduction in the number of claims made by employees against employers resulting from unsafe or unhealthy working conditions.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- International Labour Standards on Occupational Safety and Health
- ILO Report on Health and Life at Work: a basic human right
- ILO Codes of Practices
- ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (articles 38-40)
- Occupational Health in Sectors and Industries (ILO)
- ILO Convention concerning Hygiene in Commerce and Offices
- UN Women: Facts & Figures: Economic empowerment
- Guidance for Companies on Respecting the Human Rights to Water and Sanitation
- Water and sanitation interlinkages across the 2030 Agenda for Sustainable Development
- Investing in Women's Employment – Good for Business, Good for Development
- Sustainable Development Knowledge Platform, Goal 3
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 10
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 16

Creating a healthy and inspiring work environment for employees

A company considerably improved the indoor environmental quality for its employees during the modernisation of its regional corporate headquarters and an adjacent warehouse and equipment yard in Queens, a borough of New York City, USA.

The three-story 1950s corporate headquarter was refurbished into a modern corporate office space. Prior to the refurbishment, the office consisted of dark and confined spaces. An open floor plan with glass partitions was created, which now allows natural daylight to penetrate the building and also promotes the open exchange of ideas and collaboration amongst employees. CO_2 sensors ensure that indoor spaces are adequately ventilated. The performance of the ventilation system was commissioned to ensure it works as designed.

The equipment yard now also makes extensive use of natural daylighting through curtain walls and skylights. The yard's office space has better thermal comfort with improved occupant control compared with prior to the project. The vehicle maintenance shop also includes climate controlled maintenance bays that improve working conditions for mechanics.

A bike rack for 10 bikes was installed inside the headquarter office, and employees have the possibility to use the fitness centre showers and existing cycle racks outside the building. The yard modernisation included the installation of bicycle storage racks and a changing room.

Both the office and yard space better meet the requirements of the company's activities now and in the future, and promote a long useful lifespan by being more functional and flexible while providing high quality work spaces for employees.

Case Study

Improving occupant health through strategic facilities management monitoring

Wanting to create and maintain indoor comfort and health for building occupants, the facilities management team of a development in the harbour region of Sydney, Australia, rolled out a comprehensive indoor environment monitoring and auditing programme that covers:

- The monitoring of thermal comfort, including temperature, humidity and CO_2 to ensure comfortable working conditions are maintained. Trend logs of historical data are collected for analysis by the building management team and summarised in indoor environmental quality reports;

- Ongoing testing of internal noise and illuminance levels;

- HVAC maintenance, cleaning and hygiene procedures are carried out on a weekly basis by the on-site mechanical contractor;

- Annual Building Environment Audit (BEA) reports to monitor levels of airborne respirable dust, airborne microbiology, carbon dioxide, carbon monoxide, ozone, formaldehyde, hydrocarbon, thermal comfort, lighting measurement, electromagnetic field measurements and water quality; and

- The implementation of a site specific Legionella Risk Management Plan and periodic microbial testing carried out by an independent laboratory to identify any instances of legionella.

In addition, occupant health is being further promoted by providing bicycle racks for staff (and visitors), showers and change facilities for 10% of building occupants.

End of trip facilities including ironing boards, towel dryers, bicycle pump, bicycle tools etc. are being maintained on an ongoing basis to encourage staff to cycle to work.

Annual surveys of occupant transport patterns are carried out to monitor habits and identify opportunities for improvements to the facilities for both occupants and visitors.
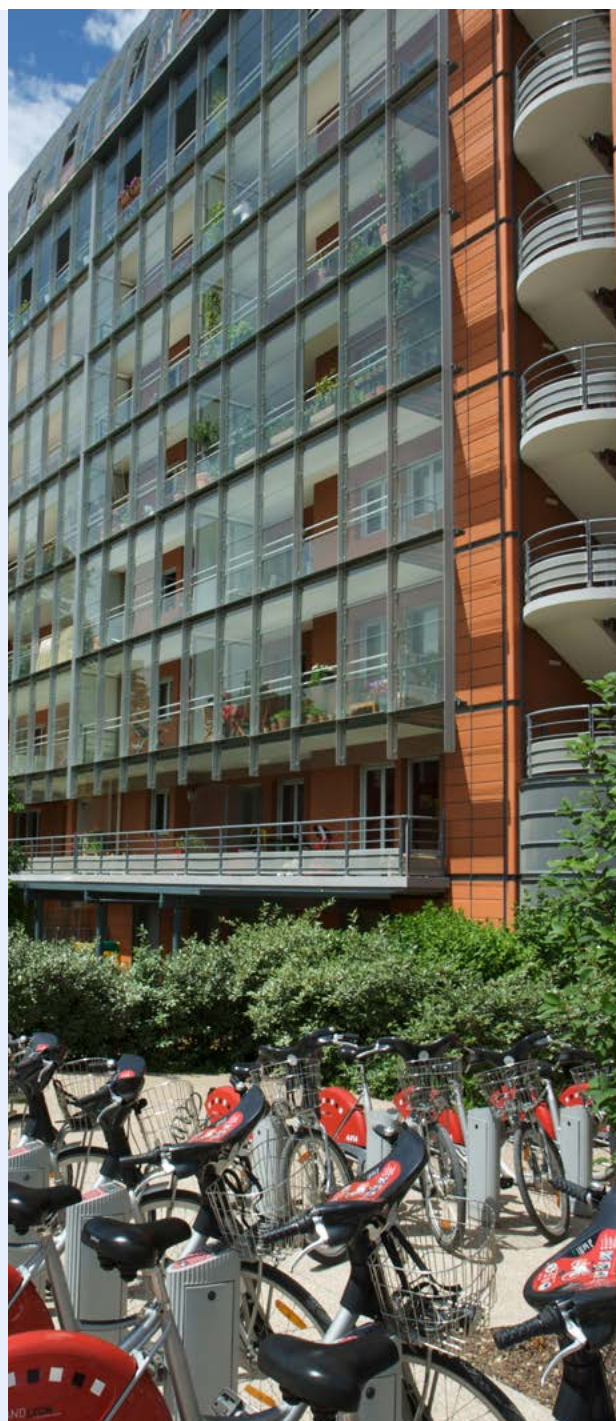
4.2.5 Decent work and human rights within the value chain

Relevant for implementing SDGs:

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

16 PEACE AND JUSTICE STRONG INSTITUTIONS

With regard to decent work within the Real Estate Use Phase, it is important to distinguish between:

a. Workers who carry out work in relation to the building's upkeep, who are therefore part of the company's supply chain. They typically provide services in repair and maintenance, security and cleaning which have specific decent work deficits; and

b. The real estate user company's own employees who use the buildings for their daily work.

The issue of labour and human rights is equally complex in the Real Estate Use Phase as it is within the Development Phase with a number of the same issues arising in both (see chapter 3, section 3.2.3, Respecting Workers' Rights).

With regard to the issue of decent work and human rights within the value chain, key points for consideration are: forced labour, minimum working age and child labour, working hours, diversity and non-discrimination

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

In the context of decent work and human rights within the value chain, companies are encouraged to:

Ensure decent work conditions for employees and subcontracted workers

- **Companies should** ensure that workers' rights are respected across their organisation, including subsidiaries.

- **Companies should** make reference to the ILO Declaration Fundamental Principles and Rights at Work in contracts with subcontractors to ensure that the same principles apply to subcontracted workers as would apply to their own employees.

- **Companies should** ensure that there is neither forced labour nor child labour in their operations and in the operations of their subcontractors.

- **Companies should** ensure proper ongoing maintenance and evaluation of the building for safety and health concerns.

- **Companies should** pay attention to occupational health and safety issues and the use of appropriate protective personal equipment where necessary.

- **Companies should** incorporate the issue of children's rights into their corporate policies and codes of conduct. Any policy with regard to child protection should also include issues such as the fight against child labour, the treatment of young workers, alerting staff towards children and children's rights in the company's supply and value chain.

- **Companies should** ensure that wages paid to their own employees and those of subcontractors are at least in line with minimum wage thresholds in the country they are operating in and are equal between men and women.

- **Companies should** develop a diversity management strategy and promote diversity and gender equality within their own workforce and also among their subcontractors.

Benefits and opportunities relating to **focusing on decent work and human rights**:

☑ Compliance with the relevant regulatory framework

☑ Establishing a reputation as a responsible employer

☑ In an age of increasing globalisation, a diverse, heterogeneous, multi-cultural and equal workforce is a clear asset for companies and their corporate culture and brand. Multiple studies link diversity to innovation and resilience. Reduced levels of discrimination and more equality within a company's workforce produces employees who are more motivated. Motivated employees are more creative and more productive. A study carried out by the Centre for Tomorrow's Company highlighted that companies with diverse workforces are shown to be more productive, have higher profitability and higher customer satisfaction.[37]

☑ Diverse teams benefit from the individual experience of each team member. In particular, for companies wishing to expand their business internationally, ethnic diversity may offer advantages in understanding and succeeding in new markets

☑ When the workplace brings together workers of different races, sexes and ages and treats them equally, it helps build a sense of common purpose. By doing so, it defuses stereotypes and prejudices that are at the heart of discrimination.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- ILO Declaration on Fundamental Principles and Rights at Work
- The Labour Principles of the UN Global Compact – A Guide for Business
- Combating forced labour: A handbook for employers and business
- ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy
- ILO Helpdesk for Business on International Labour Standards
- ILO Report on Health and Life at Work: A basic human right
- Value Chain Development for Decent Work – A guide for development practitioners, government and private sector initiatives

- Children's Rights and Business Principles
- Eliminating Child Labour – Guides for Employers
- Women's Empowerment Principles, Equality Means Business
- Supply Chain Sustainability – A Practical Guide for Continuous Improvement
- The Labour Principles of the UN Global Compact – A Guide for Business
- Investing in Women´s Employment – Good for Business, Good for Development
- From Poor Working Conditions to Forced Labour – What´s Hidden in Your Portfolio
- Decent work, the key to the 2030 agenda for sustainable development
- Sustainable Development Knowledge Platform, Goal 5
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 10
- Sustainable Development Knowledge Platform, Goal 16

Human rights assessment in the tourism industry

A leading tourism operator carried out a pilot project in Kenya to assess the human rights risks and impacts arising from the company's operations and business relationships.

Kenya is an important destination for the company but also one of a number of destinations which feature prominently when mapped against potential human rights risk.

The objectives of the pilot project were **to provide the company with a more precise understanding of the human rights context of its operations and business relationships** in the country. This included mapping the actual or potential human rights impacts it may cause, contribute to, or be linked to, as well as existing measures being taken to address them. In addition, the company wanted to **identify possible mitigating measures** and means to enhance access to remedy and to develop and test a methodology for assessing human rights impacts which could subsequently be used for other travel destinations and resorts as well. Guiding this approach was an interest in generating a process which would **engage management and stakeholders at a corporate and destination level** on an on-going basis and that could ultimately be embedded into the company's business practice.

The project was led by the company's HQ Corporate Responsibility team and actively involved its local destination subsidiary senior management as well as a sectoral NGO who acted as an independent advisor and co-researcher on the impact assessment alongside a consultancy specialised on human rights issues.

As part of the project, a number of **stakeholder meetings and consultations** were carried out with local NGOs, community members, worker associations representing workers at the destination hotels, trade unions and government representatives.

On the basis of the findings, the company and its local subsidiary are now designing and implementing concrete mitigating actions, which will aim to appropriately respond to the issues identified through the impact assessment which also included the environmental footprint of hotel operations, especially water usage. Furthermore, the company is planning to refine and adapt the methodology of the pilot impact assessment and to roll it out in other destinations in order to help shape its future strategy and practice on assessing human rights impacts, and define appropriate follow-up actions.
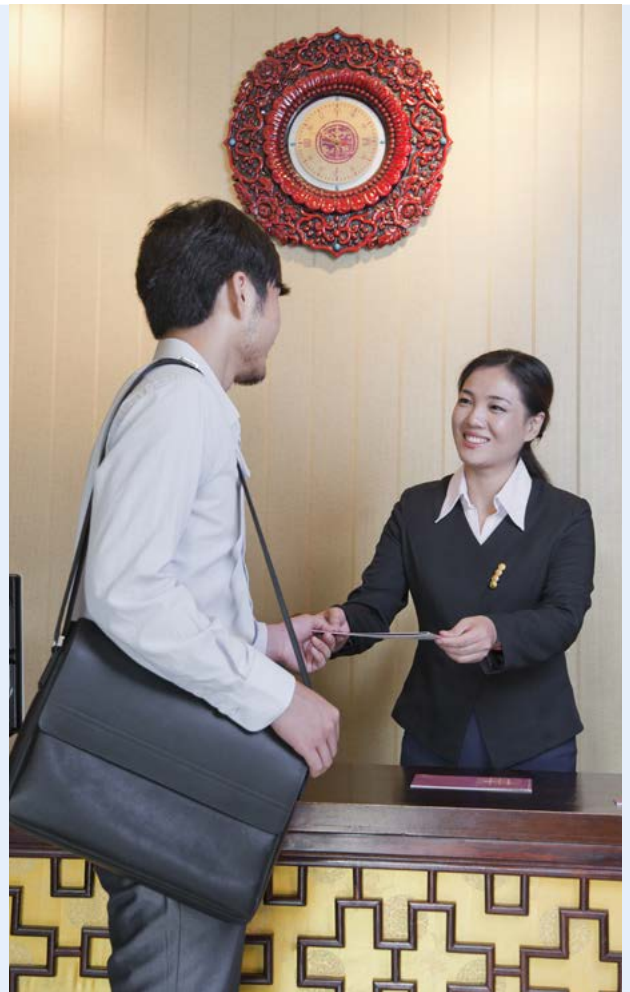
5.0 Recovery phase

5.1 Introduction

The **Recovery Phase** represents the final stage in a building's life cycle. It is when the building and its associated facilities are at the end of their economic and/or physical life. This point in time may be determined by a number of factors, such as changing user preferences, dilapidation of the whole building or parts thereof due to use of low quality materials within the Development Phase and/or poor maintenance throughout the Real Estate Use Phase, obsolescence, changes in urban space use master plans, or a natural disaster, etc.

The end of a development's viable life may not necessarily be the end of a site's physical usefulness, but quite frequently it coincides with the end of an investment period.

The principal stakeholders involved in the Recovery Phase are likely to include freehold and leasehold land owners, investors, demolition/recycling specialists but also planners/designers, developers/constructors who would be carrying out refurbishment and brownfield regeneration projects.

As indicated by Figure 5.1, given the strong land focus, all stages of the Recovery Phase have a high impact on human rights, the environment and also anti-corruption. In addition, the nature of work carried out during refurbishment, demolition and brownfield regeneration inevitable also leads to a high labour impact.

Figure 5.1   **The impact of the Recovery Phase on the individual issue areas**

Dark colour: high issue area impact
Light colour: low issue area impact

Human Rights
Labour
Environment
Anti-Corruption
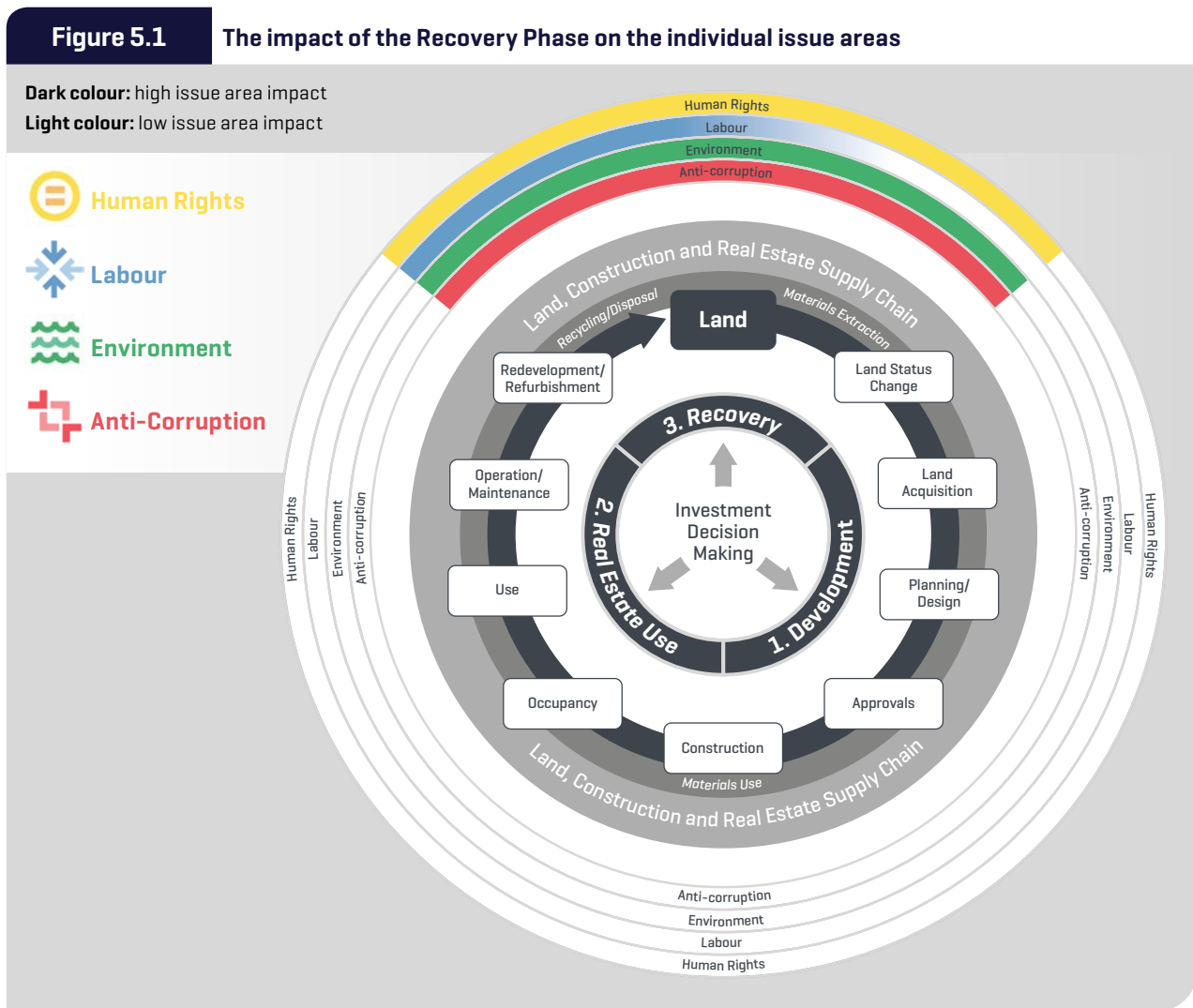
While Figure 5.1 illustrates the impact of the individual stages within the Recovery Phase on the issue areas, Figure 5.2 highlights the five key issues identified by sectoral stakeholders as critical for the Recovery Phase due to their significant impact on the issue areas.

Figure 5.2   Recovery Phase – Five key issues and stakeholder relevance

Life cycle phase	Five key issues and main UN Global Compact issue areas impacted	Stakeholder relevance
Recovery	**1.** **Strategic site-use reevaluation** Environment and anti-corruption	▲ ▼ ● ■ ◆ ★
	2. **Refurbishment and retrofitting** Human rights, labour and anti-corruption	▲ ▼ ● ■ ◆ ★
	3. **Waste management, resource conservation and recycling during demolition** Environment, human rights and labour	● ■ ★
	4. **Brownfield regeneration** Environment, human rights and labour	▲ ▼ ● ■ ★
	5. **Land recovery and rehabilitation of site** Environment and human rights	▼ ● ■

▲ Developers/constructors   ▼ Planners/designers   ● Investors   ■ *Occupiers/users*   ◆ FM Managers   ★ Demolition/recycling specialists

5.2 Recovery Phase – Five key issues and stakeholder relevance

5.2.1 Strategic site-use reevaluation

Relevant for implementing SDGs:

To develop a strategy for a building/site at the end of its life a decision has to be made on whether:

a. to refurbish or redevelop the building, either maintaining or changing its use (whereby the refurbishment would go beyond regular maintenance or interior updating), including a full or partial rebuild; or

b. to redevelop the site; or

c. to completely decommission the building, returning the site to something close to its previous natural (biodiverse) state or cultural use, such as a traditional settlement or farming system.

Both a full or partial rebuild and the redevelopment of the site will need the same type of third party approvals that would be required for a new site. With some sites, an innovative approach such as a partial renovation and partial reversal to a former state may be more appropriate and be more socially, economically and ecologically sustainable.

In most of these cases the facility will need to be de-commissioned, which may involve transferring the site to a new party.

With regard to the issue of strategic site-use reevaluation, key points for consideration are: money potential displacement, corrupt practices, consideration of heritage sites

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

Recovery Phase stakeholders interested in strategic site-use reevaluation may also wish to consider the Development Phase section of the Issue Glossary, in particular the following issues: land governance, transparency and anti-corruption, environmental stewardship, quality of planning, design and construction. The Sustainable Development Goals associated with the Development Phase are of relevance in the context of strategic site-use reevaluation as well.

In the context of transparency and disclosure, companies are encouraged to:

Carry out a thorough economic, social and environmental building and site-use re-evaluation

- **Companies should** review the strategic and long-term requirements for the existing building/site for themselves and/or for their clients to identify the extent to which these are served by the existing site facilities. This review should include:

  – conducting a survey of all relevant environmental, social and financial benefits (use value and residual site value) of the existing building;

  – an assessment of the possibility of extending or adapting the use of the existing building that may go beyond its original core function;

  – a review of their or their clients' current and future accommodation/workspace requirements and expectations; and

  – the undertaking of a survey of the current condition of the existing building and its facilities and the preparation of a schedule of disrepairs for buildings that might be retained and retro-fitted.

- **Companies should** carry out a thorough cost-benefit analysis of potential refurbishment/ redevelopment options, including for example a) demolition, decommissioning, disposal and recycling costs, b) 'ancillary costs', such as potential temporary accommodation for the existing tenants during refurbishment/redevelopment, and c) the 'sustainability' value/brand premium that could be achieved through a sustainable refurbishment.

- **Companies should** carry out a sustainability assessment of the building/site through either national or commercial assessment tools and/or methodologies in order to evaluate the optimal refurbishment/redevelopment option in terms of economic, social and environmental benefits.

- **Companies should** consider the social impact of changing the use of the building, such as future affordability after gentrification.

- **Companies should** comply with heritage and archaeological guidelines and integrate them into the reconstruction or rehabilitation evaluation process.

Benefits and opportunities relating to strategic site-use and reevaluation:

☑ Using and managing land in a more sustainable way can lead to economic and social opportunities and can unlock the land's maximum value

☑ The benefits of adopting a strategic site-use reevaluation process are largely indirect and clarifying what development policies and approaches are available to the current or new investors/owners should facilitate an evaluation of the most sustainable approaches available. These processes also allow for new innovations in design and technology to be investigated.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Commercial Real Estate: Unlocking the energy efficiency retrofit investment opportunity
- Global Alliance for Buildings and Construction
- IFC Excellence in Design for greater Efficiencies: Build Green
- IFC Green Buildings Green Building Opportunities per Sector
- International Labour Standards on Occupational Safety and Health
- ILO Codes of Practices
- ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (articles 38-40)
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 16

Case Study

Intelligent site-use assessment of corporate headquarters

A real estate user in the Netherlands carried out an extensive site-use reevaluation of its headquarters in relation to a planned refurbishment process. In addition to hosting interviews and workshops with a representative group of the management to gather views and raise awareness on day-to-day facility management, the company used a number of assessment tools, including a web-based application which analysed different sustainable refurbishment proposals (quality versus quantity).

Key to the development of its refurbishment strategy, the company worked together with experts to achieve a certification from one of the world's largest systems for environmental assessment and ratings for buildings. **The result of the company's site-use assessment is not only a more sustainable building with very low energy consumption, but also a more pleasant working environment which inspires the whole company and its employees.**

5.2.2 Refurbishment and retrofitting

Relevant for implementing SDGs:

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

16 PEACE AND JUSTICE STRONG INSTITUTIONS

Most of the world's buildings that will be standing in 50 years' time already exist. Despite significant growth and urban expansion resulting in fast-paced development of new buildings in some parts of the world, the average renewal rate in many other parts tends to be much slower.

Even if from now onwards all new developments were planned, designed and constructed with sustainability as the top priority this would only have a marginal effect for many years to come if the existing stock is not addressed simultaneously through targeted refurbishment strategies.

Although globally the average building life is 40-60 years, commercial retail and office facilities, for example, will often be refurbished after 10 and demolished and replaced after 20 years.

Strategic refurbishment decisions at the end of the life cycle will be dependent on the physical state of the building and its immediate building services, such as site drainage at that point in time.

If it has been well designed for adaptability, well operated and maintained and has been consistently and thoughtfully brought up to a modern standard then refurbishment requirements should be minimal and the overall useful life of the building greatly extended.

At the other extreme are buildings requiring complete retrofitting, a process that will require modification of the building's fabric and services to bring them up to current building and environmental control standards and user expectations. This may involve utilising newly developed technology and skill sets that were not available when the development was originally implemented.

Refurbishment and retrofitting will be subject to the same issues and action items as new construction, including obtaining planning consent and potentially going through the entire construction procedure depending on the level of refurbishment. Even where this is mostly a reverse engineering and demolition process, the associated potential environmental risks, the risk of corruption, labour and human rights infringements as highlighted in the Development Phase Chapter apply.

However, there are additional challenges with refurbishment that do not exist in new construction.

With regard to the issue of refurbishment and retrofitting, key points for consideration are: *complexity, skills and capacity, informal labour and safety, continuation of business operations/use*

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

Recovery Phase stakeholders interested in refurbishment and retrofitting may also wish to consider the Development Phase section of the Issue Glossary, in particular the following issues: environmental stewardship, respecting workers' rights, quality of planning, design and construction.

The Sustainable Development Goals associated with the Development Phase are of relevance in the context of refurbishment and retrofitting as well.

In the context of refurbishment and retrofitting, companies are encouraged to:

Create conditions for carbon mitigation and resource use minimisation during refurbishment and redevelopment

- **Companies should** review the strategic and long-term requirements to holistically consider the range of available low to very high level resource efficient refurbishment and retrofitting interventions and solutions depending on the respective characteristics and performance of the existing building. Potential refurbishment options include but are not limited to those in Table 5.1.

- **Companies should** assess the available refurbishment and retrofitting interventions related to environmental risks and select appropriate and cost effective solutions that optimise energy efficiency and minimise carbon dioxide (CO_2) emissions of operation and materials used during the refurbishment process.

- **Companies should** consider the level of building resilience against environmental risks at the location/site, such as flooding, subsidence, severe storm events and heat waves etc. that may be caused by projected climate change impacts.

- **Companies should** ensure that best practice ILO human rights and labour protection criteria are incorporated into specifications and all other contract documents when refurbishing a building.

| Table 5.1 | Potential refurbishment options[38] |

Low level intervention	Medium level intervention	High level intervention	Very high level intervention
Low energy lighting	External/internal insulation	Double/triple glazing	Micro wind generation
Internal blinds/curtains	Secondary glazing	Double skin facade	Combined heat & power
External blinds/awnings	Movement/daylight sensors	External louvers	Ground or water-source heat pump
Low-E coating on glazing	Heat recovery systems	Photovoltaic panels	Solar cooling solutions
Passive ventilation	Solar thermal panels	Bio mass boiler	Geothermal piling

Benefits and opportunities relating to refurbishment and retrofitting:

☑ Building life extension is a strategic choice. Demand for resource-efficient refurbishment is steadily increasing, creating significant business opportunities for developers

☑ Extending the life of a building may involve some partial deconstruction (e.g. replacement of external glazing and utility services), but can often be faster for companies to implement and less costly than complete reconstruction. In addition, it may be more carbon efficient to extend the life of an existing building due to reduced material demand, the facilitation of material substitution/re-use and the minimisation of waste

☑ If the refurbishment is accompanied by site restoration, this may also involve retaining embodied carbon in infrastructure, such as kerbs and paving materials, and also indirectly, from reducing transport use by using local-sourced, discarded or recycled material

☑ One of the main environmental benefits of undertaking refurbishment works or retrofitting is the gain in terms of carbon sequestration that come from retaining the carbon (in the form of CO_2) already embodied/locked into existing built assets from when it was originally assembled

☑ The saving of scarce raw materials used for construction

☑ Refurbishment encourages the improvement of a building's performance through more energy efficient technology and the conservation of existing historic and archaeological structures. Improvement in energy efficiency itself is a crucial first step towards a sustainable energy future and is crucial in the fight against climate change. Reducing energy use through adopting efficiency measures at the refurbishment stage can also reduce dependence on imported fuels, reduce potable water demand and waste and improve air quality.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- UN Environment Finance Initiative report on Energy Efficiency retrofit investment opportunities
- IFC Excellence in Design for greater Efficiencies: Build Green
- Global Alliance for Buildings and Construction
- Sustainable Development Knowledge Platform, Goal 7
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 16

Case Study

Achieving resource efficiency and creating employment opportunities through refurbishing a run-down 1970s municipal housing estate

The apartments in a municipal housing estate in Örebro, Sweden, originally constructed in the 1970s, had become energy inefficient and costly to heat and were in a poor state of repair. Improvements from the refurbishment include:

Improved energy performance:

A reduction of the refurbished apartments' energy consumption by 68% from 210 kWh/m^2 to 67 kWh/m^2, equivalent to around 40% less than the Swedish Building Code, was achieved. Additional insulation was added to the roof and walls, and new exterior windows and doors were installed with U-values of 0.149-0.200, 0,619, 0.9 and 1.0W/m^{2}K respectively. Building airtightness is now 0.35 l/m^{2}s, even less than the 0.41 l/m^{2}s predicted by the energy calculations.

LED (Light-Emitting Diode) lighting and presence detectors were fitted, reducing electricity for lighting by around 70% compared with prior to the refurbishment.

Reduced carbon emissions:

By the end of the refurbishment period, the carbon emissions of the redeveloped neighbourhood are expected to be 65% lower, equivalent to 135 tonnes per year, despite having significantly increased the total residential floor space.

Use of environmentally responsible materials:

To promote healthy indoor environments, only building materials rated at least C+ by the Swedish SundaHus material environmental assessment database were used and alternatives were sought if materials did not meet the criteria. Improved building envelopes have provided a more stable indoor temperature with fewer drafts and quieter living environments for residents.

Water efficiency and storm water management:

The apartments' water consumption was reduced by 30% through the installation of water efficient taps, showers and toilets.

The landscaping has been designed to absorb and delay runoff, sedum green roofing reduces runoff by up to 75% in the summer and runoff is directed into ditches and ponds, where it slowly infiltrates the ground, helping to create attractive wildlife habitats and garden spaces for residents. Rainwater harvesting tanks are used to collect water from roofs for landscape irrigation to avoid using potable water.

Contribution towards sustainable urban development:

The project has **given an existing rundown residential neighbourhood** which is also one of the most multicultural in the area with a high unemployment rate a new lease of life. **The refurbishment has been creating local job opportunities** by offering construction training and work placements to long-term unemployed residents which can lead to employment with the developer, the housing company or another project partner. During the four-year redevelopment project, between 50 and 80 previously unemployed residents have received training and have found work through this initiative.

Boosting local businesses and improving air quality through innovative town centre refurbishment

The pathways in the centre of a popular tourist destination in the North of the United Kingdom had become dirty and shabby and the local council was also experiencing problems with standing traffic and the resulting high levels of Nitrogen Oxide, potentially causing respiratory problems for local residents.

The council entered into arrangements with a landscape manufacturing company for the existing town centre pathways to be replaced with the company's specially-designed paving which converts Nitrogen Oxide into harmless gases.

By decreasing local Nitrogen Oxide levels by 17.7% over a period of four months, the town centre refurbishment led to **a considerable improvement in air quality** in the area, **reducing the risk of respiratory diseases for residents** and **a more visually appealing and functional space for tourists and shoppers**, having a **positive impact on local businesses**.
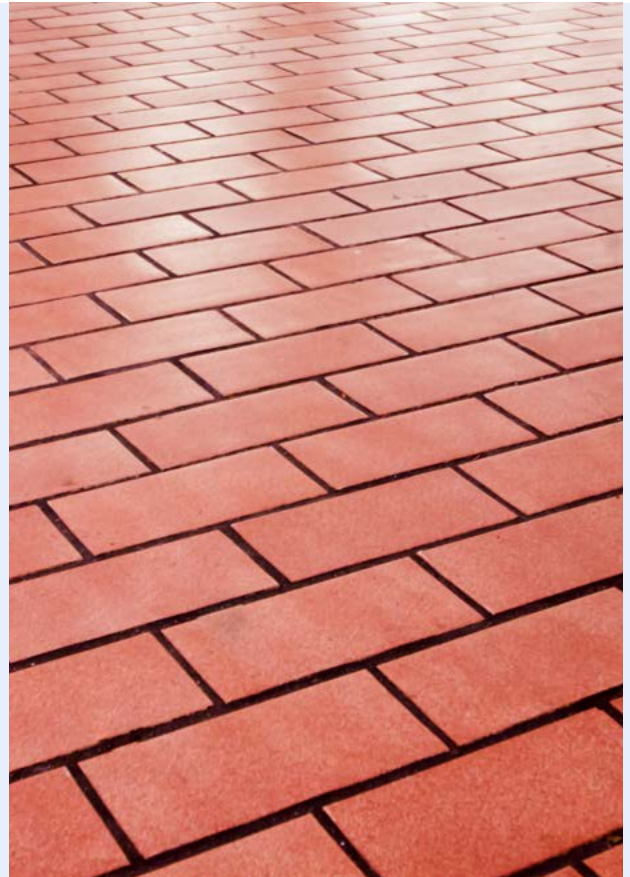
5.2.3 Waste management, resource conservation and recycling during demolition

Relevant for implementing SDGs:

Self-generated demolition waste in the construction industry is often one of the highest generators of waste.

Waste types include: concrete, bricks, wood, insulation materials, electrical wiring and reinforcement steel. It also may contain hazardous elements such as asbestos and lead or even radioactive materials.

Whereas certain types of demolition waste such as plasterboard are non-hazardous while in use, they become hazardous once they end up in landfills due to the release of the toxic gas hydrogen sulphide.

Typically, government or local authorities stipulate how much waste needs to be sorted before it is transported to landfills or other waste treatment facilities. Demolition or the removal of hazardous materials can often only start once authorities have ensured that safety guidelines and restrictions have been adhered to. Waste disposal in landfill is the least preferable option in terms of both its social and environmental impact. It is a major source of methane gas, in relation to which a landfill gas monitoring programme may be required to assess its potential risk. Unless it can form the basis of energy generation, the alternative of waste incineration can be an equally unacceptable disposal technology.

However, **depending on the type of waste, there is significant potential to reuse and to recycle demolition waste**. For example demolition rubble can be crushed and reused in new construction projects and road building. Waste wood can also be recovered and recycled. Waste levels and types are strongly influenced by decision-making with regard to materials and their potential to be re-used and/or recycled during the Development Phase.

Waste management has a hierarchy of four main principles (in order of preference):

- retention and waste prevention;
- re-use of materials;
- recycling; and
- energy recovery

With regard to the issue of waste management, resource conservation and recycling during demolition, key points for consideration are: hazardous waste, re-use and recycling, waste water, health and safety

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

Recovery Phase stakeholders interested in waste management, resource conservation and recycling during demolition may also wish to consider the Development Phase section of the Issue Glossary, in particular the following issues: environmental stewardship, respecting workers' rights, quality of planning, design and construction. The Sustainable Development Goals associated with the Development Phase are of relevance in the context of waste management, resource conservation and recycling during demolition as well.

In the context of waste management, resource conservation and recycling during demolition, companies are encouraged to:

Prepare an independent method statement and risk assessment for safe and efficient waste management at demolition stage

- **Companies should** arrange for the preparation of a pre-demolition audit and deconstruction schedule as the basis for developing the method statement, defining how to both undertake the demolition safely and to maximise the quantity of reclamation material. Particular focus of such a strategy should be on reducing the proportion of waste going to landfill and on defining how hazardous or special waste should be handled and disposed of.

- **Companies should** arrange for the preparation of a risk assessment and method statement before dismantling any structure, disconnecting services or demolishing civil works. The work method statement must encompass: work sequencing; site-specific work methods; material recycling targets and specification; protective equipment and clothing; emergency accident procedures; and issuance of a completion certification.

- **Companies should** ensure that waste management strategies encompass the entire process from demolition, disposal of waste, waste haulage and final disposal. The approach used will be highly dependent on whether the demolition at the end of life had been considered in the original construction design and the type of waste created during the demolition process.

- **Companies should** ensure that all local legal requirements are complied with and certification for removal of waste materials from site is available for inspection.

- **Companies should** ensure that provision is made for handling site waste water to protect groundwater and existing natural water courses and drains.

- **Companies should** stipulate compliance to international safety standards and the use of management systems from demolition and recycling specialists.

- **Companies should** proactively adopt international safety standards and management systems if they are the main contractor or subcontractor at the point of demolition and waste management.

- **Companies should** observe the decent work and labour procedures outlined in ILO mandates in the areas of employment, training, conditions of work and life and industrial relations during demolition.

- **Companies should** ensure the application of the highest standards of occupational health and safety, pay particular attention to the ILO safety standards for demolition and protection against biological agents when considering these standards and ensure the use of appropriate protective personal equipment throughout the whole demolition and waste management process.

- **Companies should** ensure that surrounding communities are not affected by either the demolition works or the site waste disposal.

- **Companies should** take effective measures to ensure that materials, especially those of a hazardous nature are not stored or disposed of on indigenous peoples' lands or territories without their free, prior and informed consent (FPIC).

- **Companies should** comply with the following obligations under international and national legislation and communal customs as part of administering any demolition process:

  – health and safety, including addressing perceived public health and environmental concerns

  – heritage and archaeological issues

  – nature conservation

  – biodiversity protection

  – democratic choices of local communities, including indigenous people and considerate contractor schemes.

- **Companies could** process demolition materials for reuse and/or resource recovery. Preferably this should be undertaken on site. Reuse and/or resource recovery is highly dependent on the market that is available for selling the recyclables. Depending on its economic viability the processing of waste can be high level (e.g. reusing waste timber to create chipboard or recycling aluminium) or low level (such as using simple crushing technology to create on-site fill).

Benefits and opportunities relating to **waste management, conservation and recycling:**

☑ Waste management is an area where substantial opportunities and benefits are possible for demolition contractors in particular – primarily as revenues from reuse and recycling of demolition materials. It also generates direct cost savings through reduced disposal of surplus materials and reduced transport costs

☑ Focusing on waste management and avoiding the use of landfill will also have significant environmental benefits to local communities, including the prevention of the generation of methane.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Harmful substances and hazardous waste
- ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy
- ILO Declaration on Fundamental Principles and Rights at Work
- The Labour Principles of the UN Global Compact – A Guide for Business
- ILO Report on Health and Life at Work: a basic human right
- Sustainable Development Knowledge Platform, Goal 3
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 14
- Sustainable Development Knowledge Platform, Goal 15

Case Study

Making cost savings through extensive material recycling during demolition

During an urban redevelopment project in central Oslo, Norway, creating an 85,000 m^2 mixed use development, a 33,000 m^2 19th century hospital building complex was demolished, producing 90,000 tonnes of waste material, 98% of which was recycled by cataloguing and quantifying demolition materials during the project planning stage and then integrating it into the construction process as a resource.

- Waste produced during construction was collected and sorted, first on each floor, and then in containers on site reserved for the different waste fractions;

- Special initiatives included agreements with subcontractors to minimise, collect and recycle packaging for materials and components;

- Potentially hazardous materials, such as asbestos, lead and polychlorinated biphenyls (PCBs) from florescent light tube fixtures were screened out and safely disposed off-site to prevent harmful substances entering the material recycling process;

- Demolition materials reused on-site included 27,750 tonnes of concrete and 9,250 tonnes of brick crushed on-site in a mobile crushing plant and used for road construction, backfill materials, pathways and landscaping;

- 2,300 tonnes of granite staircases were also used as outdoor steps and for terrain stabilising walls, and old cobblestones were used to pave paths;

- Materials reused off-site included over 18,000 tonnes of brick and concrete used to create landslide barriers on slopes north of the city and some of the larger aggregate was used as sub-base material for a car park project outside the city;

- 3,000 tonnes of steel reinforcement were also recycled externally.

Recycling demolition materials from the hospital buildings reduced transportation, disposal and construction material costs by approximately US$ 700,000, which amounted to around 10% of the total demolition cost. Sorting, storing and crushing demolition materials on-site also made financial savings. Materials that could not be reused in the new development project were sold off-site to private companies.
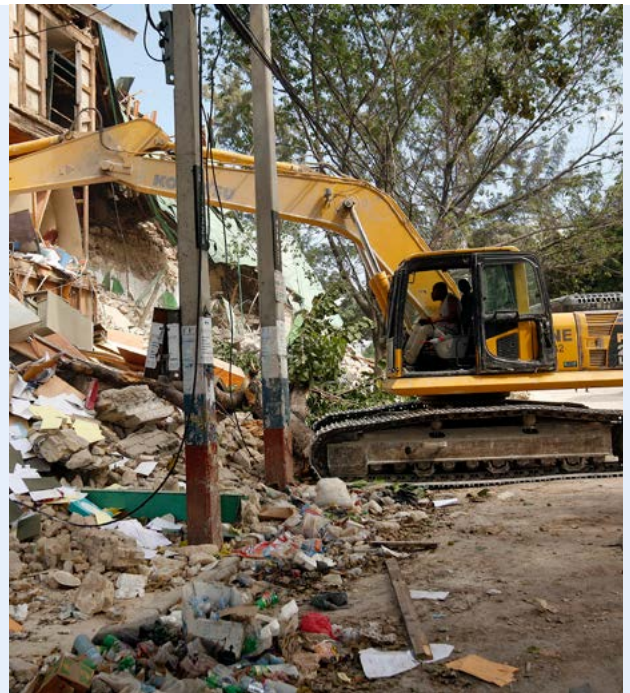
5.2.4 Brownfield regeneration

Relevant for implementing SDGs:

Typically, brownfield sites exist in urban industrial sections. They are locations with abandoned commercial buildings, factories or other former polluting operations, such as chemical plants. However, there are also smaller type brownfields in some older residential areas. These include business operations such as dry cleaning outlets or petrol stations that will have produced significant levels of subsurface contaminants during prior operations.

Site clean-ups may have to accommodate high levels of inadequate and poorly maintained liquid and solid waste disposal from existing buildings.

Once cleared up for development, such an area has the potential to enjoy a new lease of life for instance as a retail or leisure park or even as a new residential or office development. The regeneration of previously used brownfield sites is particularly relevant in high population density countries with a history of industrial development affecting both urban and rural land use and a scarcity of greenfield sites.

Viewed globally, UN Environment, reporting on the demand for agricultural land, stated that "*large areas with degraded soils are in need of restoration and better land use planning would help to avoid building activities on fertile land*".[39] UN Environment also estimates that around a quarter of global soils are degraded and "*nearly 40 percent of the degraded area is thought to be 'lightly' degraded, with strong potential for restoration at low cost*".[40]

As with the Development Phase, land use regulations and zoning principles will apply, generally defined by height, bulk, population density and prescribed use. Other controls on land may also apply, including local ordinances, covenants, easements, abstraction rights and access to water courses and other resources, rights-of-way and special protected areas (such as archaeological sites and wildlife reserves).

With regard to the issue of brownfield regeneration, key points for consideration are: soil contamination and public health issues, forced and child labour.

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

Recovery Phase stakeholders interested in brownfield regeneration may also wish to consider the Development Phase section of the Issue Glossary, in particular the following issues: land governance, respecting workers' rights, environmental stewardship, quality of planning, design and construction.

The Sustainable Development Goals associated with the Development Phase are of relevance in the context of brownfield regeneration as well.

In the context of brownfield regeneration, companies are encouraged to:

Minimise impact on the environment and communities during brownfield regeneration

- **Companies should**, as part of the process of developing a strategy for using brownfield sites, define the liabilities of past and present parties involved, in accordance with the 'polluter pays' principle.

- **Companies should** review potential planning, legal and environmental restrictions that may lead to conflicts of interest in how the brownfield land was utilised and how it may be used in the future.

- **Companies should** ensure the application of the highest standards of occupational health and safety and the use of appropriate protective personal equipment during brownfield regeneration and rehabilitation of sites.

- **Companies should** examine the current impact on local communities of previous environmental damage and spillages. The future effect on the local community of using the brownfield site will also need to be assessed, particularly with regard to the presence of hazardous materials and other indirect issues that may affect the site clean-up process, such as statutorily defined safety factors, working hours, and local authorities´ and local communities' plans for sites.

- **Companies should** consider general community needs including food and housing, especially those of indigenous peoples, who may have been the subject of internal displacement during the original development.

- **Companies could** prepare consultation design materials to be presented to existing communities in order to develop future proposals for the site that are acceptable to existing and indigenous communities.

Benefits and opportunities relating to brownfield site regeneration:

☑ For the investor, owner or developer, if the company already owns the land, further land acquisition will not be needed for potential expansion. Brownfield sites are also often available to new owners at a low premium due to the potential contamination and remediation costs involved. Depending on the extent and nature of contaminative substances present on the site there may be planning land value gain from the improvements, for both communities and developers, particularly, if combined with parallel infrastructure investments.

☑ The regeneration of existing development sites means that new greenfield sites do not necessarily need to be used, which can be both a financial benefit and a social gain as communities will not usually be impacted. The clearing up of contaminated sites and the remediation of soils will result in a general improvement in living conditions for local communities living nearby and to an urban rebirth for formerly abandoned areas, especially, if the clean-up technologies can be undertaken in-situ, confining any additional impact to the original development site.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- World heritage: Benefits beyond borders
- Sustainable Development Knowledge Platform, Goal 1
- Sustainable Development Knowledge Platform, Goal 3
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 8
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 14
- Sustainable Development Knowledge Platform, Goal 15
- Sustainable Development Knowledge Platform, Goal 16

Case Study

Bringing a derelict and decaying London site back to life

A responsible real estate fund acquired an urban infill site in London, United Kingdom, to bring a derelict and decaying site back to life. It had lain sorry and unused for a decade since its compulsory acquisition in the context of a high speed train line project. It was a particularly challenging site as the tunnel was passing just three meters below foundation level.

Applying the company's own trademark Footprint principles to an existing planning-consented scheme, the company took the project back through the planning and conservation area process, remaining with the spirit of the original scheme, but enhancing its design quality, sustainability and liveability – and hence, its value. **Engaging meaningfully with local people and neighbours, the application received not a single objection, but added over £1m (13%) to value.**

The site now provides 25 sensitively designed new-build homes and three commercial spaces. **Site regeneration also comprised the retention and restoration of an historic stable block, the creation of two intimate courtyard spaces, and the refurbishment of a derelict Victorian town-house**.

Sustainability features to reduce energy usage and occupier bills include solar-supplemented photovoltaic electricity, combined heat and power (CHP) heat and electricity generation, rainwater harvesting, green roofs, super insulation and airtightness (in line with the company's 'fabric first' approach to development), intelligent Nest learning thermostats, and mechanical heat recovery (MVHR).

5.2.5 Land recovery and rehabilitation of site

Relevant for implementing SDGs:

Most development projects will have resulted in varying degrees of habitat loss or the land and the soil having become degraded.

With the introduction of environmental protection laws, the demand for land recovery or rehabilitation has increased over the past few decades.

"Conservation of biodiversity makes a critical contribution to moderating the scale of climate change and reducing its negative impact by making ecosystems (including human societies) more resilient."

Former UN Secretary General Ban Ki-Moon

Land recovery techniques can be used to speed up the amount of time necessary to restore a location to its original state. The process of land recovery involves the removal of all man-made structures, toxins and other dangerous substances, improving soil conditions and adding new flora that will attract fauna such as pollinators and ultimately increase overall biodiversity which in turn may also help to create natural spaces for recreation in urban areas.

Although land recovery is mostly associated with addressing problems caused by man-made industrial processes such as mining, oil drilling and other petro-chemical related processes, it is also used to clean up natural processes as natural disasters such as earthquakes, mud-slides and flooding can also cause damage to the natural environment and surrounding communities.

Table 5.2	Examples of recovery and rehabilitation initiatives[41]		
Processes	**Field/Farm/Site**	**Watershed**	**Regional/global**
Biodiversity, biological activity and wildlife	Conservation tillage Rotations/organic inputs Intercropping/rotations Pest control Water recycling	Integrated watershed management Agroforestry Protected areas Corridors	Territorial planning Infrastructure Protected areas Corridors
Energy use/carbon	Bio-mass management Grassland management	Integrated watershed management Agroforestry	Territorial planning Infrastructure
Soil/air/water pollution	Waste treatment Water cycling/treatment Invasive species control	Integrated watershed management Corridors/riparian strips	Territorial planning Protected areas
Physical state	Grassland management Irrigation Soil protection Contour cropping/terracing Site specific management	Protected areas Corridors/riparian strips Agroforestry	Territorial planning Infrastructure Integrated watershed management
Socio-economic state	Local employment creation Conservation of cultural heritage	Integrated watershed management Corridors/riparian strips	Territorial planning Infrastructure provision

With regard to the issue of land recovery and rehabilitation of site, key points for consideration are: compulsory acquisition, invasive/introduced species, soil contamination and public health, health and safety

More specific information on the issues above can be found in the Issue Glossary in chapter 7.

Recovery Phase stakeholders interested in land recovery and rehabilitation of site may also wish to consider the Development Phase section of the Issue Glossary, in particular the following issues: land governance, environmental stewardship.

The Sustainable Development Goals associated with the Development Phase are of relevance in the context of land recovery and rehabilitation of site as well.

In the context of land recovery and rehabilitation of site, companies are encouraged to:

Undertake an environmental impact assessment with regard to land recovery and rehabilitation

- **Companies should** review the local statutory and regulatory requirements for preparing Environmental Impact Assessments (EIA) and, if necessary, seek legal advice and clarification.

- **Companies should** commission specialists to undertake an environmental screening process to identify whether a full environmental impact assessment of the site is required.

- **Companies should** identify which specialist studies (general wildlife surveys, reviews of flora, fauna, agricultural, ecological, hydrological, geomorphological, geological, historic/cultural and archaeological) may be required to support a full environmental impact assessment if required and recruit the appropriate specialists to carry out these studies.

- **Companies should** undertake a survey and evaluation of the condition of the site to assess what clean up and rehabilitation technologies may be required to bring it up to current and future projected environmental standards, based on assessing site development features, including natural and geological hazards and man-made factors.

- **Companies could** develop an integrated action plan, creating multiple uses and benefits by taking account the following issues:
  - competing demand for high quality rural land
  - forestry/water management/bio-energy/food security/areas for wildlife/livestock
  - interaction with local communities
  - policies on food and energy conservation
  - sustainable intensification of agricultural practices
  - promotion of native species
  - eco-system valuation of land, forestry, water and marine resources
  - unblocking of animal migration routes, requiring planning to create connected greenways, swales and wildlife corridors
  - possible re-use of construction materials (post-demolition for example).

Internationally there have been many initiatives focused on applying ecological principles to renovate land damaged by man's development activities. The types of initiatives that have been implemented have used a combination of approaches, some of which are outlined in Table 5.2.

Relevant UN resources and tools

Click titles to take you to the web links (PDF version). Full weblinks available in Section 9.0.

- Ecosystem management
- Environmental Stewardship Strategy – Overview and Resources for Corporate Leaders
- A Framework for Corporate Action on Biodiversity and Ecosystem Services
- Compulsory acquisition of land and compensation
- Sustainable Development Knowledge Platform, Goal 1
- Sustainable Development Knowledge Platform, Goal 2
- Sustainable Development Knowledge Platform, Goal 6
- Sustainable Development Knowledge Platform, Goal 7
- Sustainable Development Knowledge Platform, Goal 11
- Sustainable Development Knowledge Platform, Goal 12
- Sustainable Development Knowledge Platform, Goal 13
- Sustainable Development Knowledge Platform, Goal 14
- Sustainable Development Knowledge Platform, Goal 15

Benefits and opportunities relating to rehabilitation/remediation of site into bio-habitat:

☑ A wide range of interlinked climatic, social, health, wildlife habitat and economic benefits can be derived from restoring natural ecological processes within the limits permitted by planning regulations. Reinstatement of the semi-natural environment affects living organisms and can also contribute to enhancing air quality and climate change adaptation. Flood risk may also be mitigated through a holistic approach to land use planning, hydrological design and water management

☑ There is a whole range of both public and private business benefits flowing from this type of initiative, including water quality improvement, improved urban resilience to natural and man-made disasters, the protection/conservation of wildlife and human/animal health benefits

☑ Numerous benefits can be derived from fostering ecosystem services through increasing biodiversity. A good example is giving over rehabilitated land to wild flowers that will attract pollinators such as bees which are essential for food security.

Case Study

Breaking the deadlock between conservation of bio-habitat and redevelopment

Lamma, the third largest island off the city of Hong Kong had experienced mixed fortunes during the 20th century. The Northern part of the island had enjoyed modest growth after completion of a power plant. The Southern part, on the other hand, found itself in a downward spiral, particularly the three villages of Mot Tat, Yung Shue Ha and Tung O.

These traditional fishing and farming villages had fallen into disrepair with most of the indigenous villagers moving away to other parts of Hong Kong or overseas. The island included a designated conservation and recreation area with two sites of special scientific interest, one of them a turtle beach. In terms of biodiversity, the island had about 2/3 of the flora and fauna species in the region and dense secondary woodland had developed on abandoned farmland along the valleys.

The indigenous population was looking to revive local communities by creating job opportunities and improved infrastructure through a low-carbon eco-development while achieving minimal negative impact on the environment by creating a conservation corridor.

As part of the process, specialists and consultants for technical studies were commissioned and dedicated conservation teams were set up. Effective communication about the redevelopment concept and its rationale helped the appointed developer to understand the needs of stakeholders who appreciated the potential advantage of having additional resources for conservation, both in ecological and cultural terms.

Compared with the total investment, the cost of implementing the initiatives was but a small proportion and most of them were required anyway to address the lack of infrastructure in the location and to obtain approval from government. The difference was in the approach rather than the costs. Local biodiversity and cultural heritage were turned into assets to attract investors and visitors to the proposed eco-destination. The additional investment actually lead to increased financial returns and enhanced the development company's corporate image and branding. The indigenous community was able to benefit from economic growth not compromised by degradation of the environment. In the long-term, Hong Kong will benefit from a new tourist destination with a strong conservation and low carbon theme.

6.0 Key building blocks of a responsible land, construction and real estate business strategy

The case studies featured in this document clearly illustrate that there are already many companies in the industry doing their best to avert the adverse impacts of the sector on the four issue areas. Some of them are going well beyond legal requirements and are setting good practice standards within their regional context in the absence of regulatory frameworks.

General awareness about the environmental impact of real estate development is definitely on the rise and as the heat map in Figure 6.1 illustrates, the impact of the sector on the environment is certainly an ongoing theme. However, while crucial in safe-guarding human survival, a one-dimensional focus on environmental stewardship does not do justice to the wider social sustainability impact real estate and construction have on individuals and communities and going forward, companies should put policies, systems and processes in place to equally address the other three issue areas as well.

| Figure 6.1 | The impact of the individual stages of the life cycle on the issue areas |
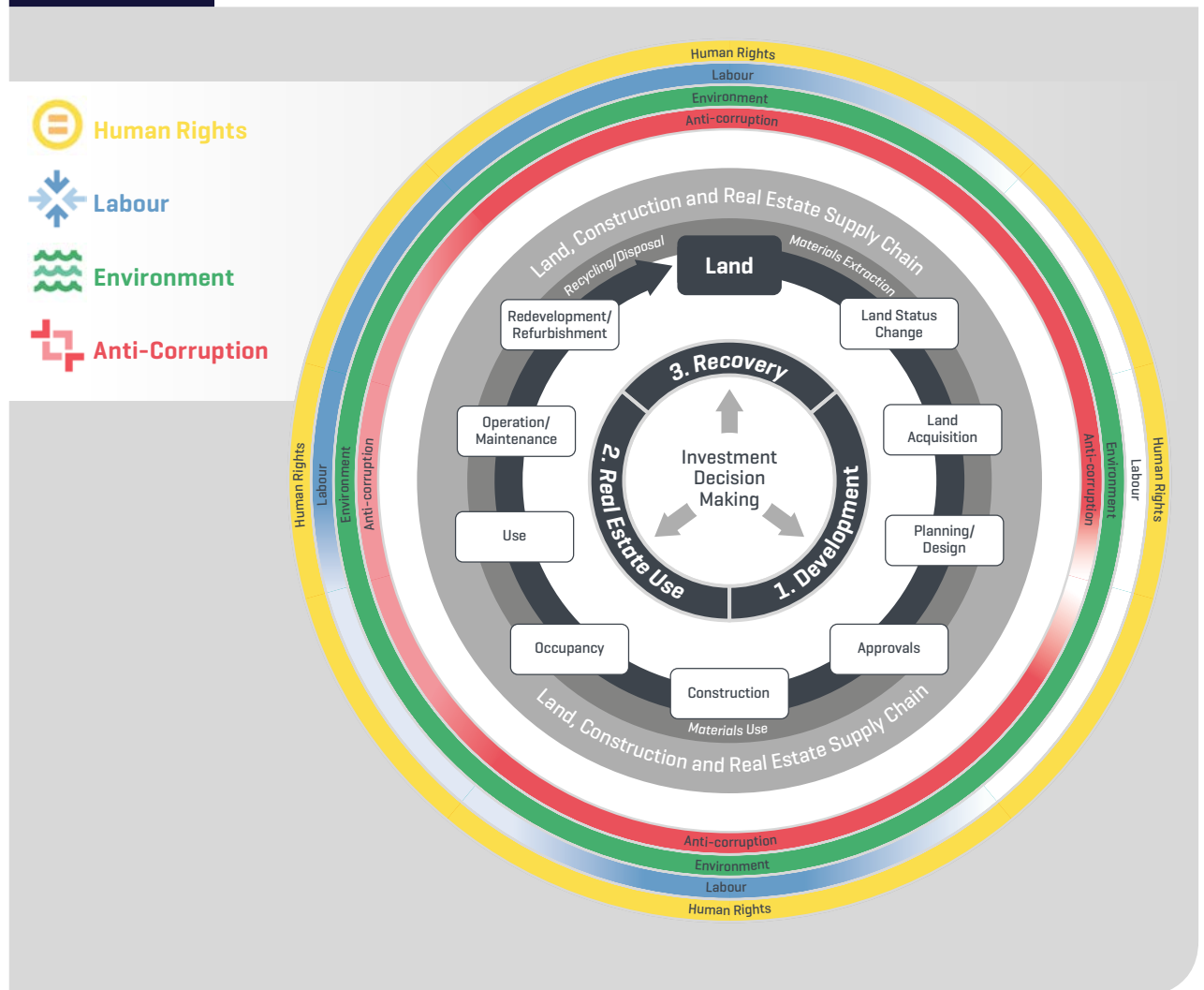
As the preparatory research for this resource has shown, many companies operating in the sector already have relevant corporate sustainability policies and commitments in place. These policies are a solid foundation for a responsible business strategy but to bring these corporate policies to life in daily operations, they need to be firmly implemented, embedded and enforced.

The action items identified in this document have been developed to do just that. These actions items, when summarised, make up the building blocks for a responsible business strategy for land, construction, real estate use and investment and for implementing the Sustainable Development Goals as shown in Figure 6.2.

Figure 6.2 — **Key building blocks for a responsible business strategy and for implementing the SDGs**

Responsible Business in Land, Construction, Real Estate Use and Investment

Roll-out and implementation of board level corporate sustainability policies and commitments

Adequate social, economic and environmental impact assessment at all relevant stages of the life cycle

Setting, monitoring and reviewing of performance targets and reporting on annual progress

Holistic approach to handling real estate data/information at all corporate levels: Corporate Real Estate Sustainability Management (CRESM)

Environmental stewardship as integral part of the development and daily operation of corporate real estate

Active fight of corruption and increase of transparency at all levels

Responsible procurement choices that respect the protection of human and labour rights as well as the environment

Delivery and operation of safe, high-quality and healthy buildings

Open dialogue and interaction with all stakeholders at all stages of the building life cycle

Multi-stakeholder educational outreach and communication of corporate sustainability strategy and achievements

Corporate Sustainability Policies and Commitments

Beyond this resource

The approach taken in this document is rooted in the **UN Global Compact Management Model**[42] (the **'Management Model'**), a practical yet comprehensive tool to help companies evolve their sustainability efforts. Comprised of six management steps, it guides companies of all sizes through the process of formally committing to, assessing, defining, implementing, measuring and communicating a corporate sustainability strategy.

The Management Model is flexible and adaptable and should be used to guide strategy planning and execution efforts in integrating the UN Global Compact Principles into business operations.

Each step of the Management Model (see Figure 6.3) provides an essential element to support a company's corporate sustainability efforts, although companies might benefit from customising the order of steps to meet their specific needs. For example, a company might communicate the findings of its assessment to stakeholders, prior to defining its initial sustainability strategy. In addition, companies could also work through two or more of the Management Model's steps at the same time.

The Management Model has been developed in the context of the UN Global Compact Ten Principles, which are the focus of this document.[43] Depending on the national and regional context, companies also may need to consider following specific ISO and sectoral reporting standards such as the GRI Construction and Real Estate Sector Supplement (GRI CRESS) or any additional standards applicable to their respective geographical location, all of which can help a company to fulfil its annual disclosure requirement in line with the UN Global Compact Communication on Progress policy.

Figure 6.3 UN Global Compact Management Model

7.0 Self-Assessment Checklist

The Self-Assessment Checklist below has been specifically developed for companies operating within or interacting with the land, construction and real estate sector to position themselves and their business activities in relation to implementation of the Ten Principles of the UN Global Compact and the SDGs in their daily operations.

Use of the Global SDG indicator framework

The individual headings of the SDGs are of a generic nature and therefore only provide an overarching context. Underneath each of the 17 SDGs sits a respective set of relevant indicators designed to monitor progress, inform policy and ensure accountability of all stakeholders.

These 232 indicators make up the global SDG indicator framework, adopted by the UN General Assembly on 6 July 2017.

As the indicators enable a more detailed alignment of the sectoral action items identified in this document, the checklist signposts every specific action against one or several relevant SDG indicator(s).

To help develop global implementation strategies, all indicators are classified by the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) according to a three-tier system on the basis of their level of methodological development and the availability of data at the global level. However, this does not mean that one particular indicator is more important than others.

This principle also applies to the checklist below which treats all indicators as equally important. The priority level classification featured on the list refers to the **'could'** and **'should'** differentiation of the sectoral action items explained further down on this page and does not represent a weighting of SDG indicators.

The list contains all of the issues, action items and specific actions identified in this resource per life cycle phase. Apart from signposting which SDG indicators are relevant for the individual key issues in each of the three life cycle phases, it also indicates which of the Ten Principles relates to which action item. As seen throughout this document, given the nature of the sector and the complexity of the issues, certain overlaps and cross-linkages between individual SDG indicators and principles when applied to business activities in land, construction, real estate use and investment are inevitable. Against this background, the attribution may not always be clear cut. While it is important to note that the SDGs and the language used were originally targeted at governments, the issues covered are equally applicable to the business community.

In line with the differentiation between the action items, the priority classification of specific actions items is as follows:

* Refers to **'could' action items**, corresponding to the notion of 'support' and signals practices that today may be considered as leading or even pioneering and aspirational, but that may become mainstream over time. 'Could' action items may be most useful for those companies that have already implemented a number of the recommended 'should' action items and want to use this document to identify further improvement opportunities with regard to their responsible business performance.

** Refers to **'should' action items**, corresponding to the notion of 'respect', considered necessary for all companies to meet their social and environmental responsibilities and to implement the Global Compact Principles and the SDGs.

Each of the individual life cycle phase checklists allows companies to assess their status with regard to implementation of the specific actions at any given point in time. Companies can determine their level of implementation against the following generic parameters:

- **Action implemented**
- **Action partly implemented**
- **Action not yet implemented**

This helps companies in target setting and monitoring for individual action items and specific actions.

The Self-Assessment Checklist illustrates the significance of sectoral activities for meeting the 2030 sustainable development agenda. At first glance this may seem daunting and organisations are not expected to address each and every SDG at the same time. On the basis of the linkages established between the specific actions and the SDGs listed in the checklist, Figure 7.1 below provides a summary of the most important SDGs per life cycle phase in order of importance.

| **Figure 7.1** | **Priority SDGs per sectoral life cycle phase** |

1. Development Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
1. Land governance	**I. Enter into an open dialogue with members of the community at the point of land status change and at the planning and design stage**	Carry out a thorough social impact assessment covering the protection of human rights including those of marginalised groups such as children, persons with disabilities, the elderly and indigenous peoples as well as differentiated impacts on women and men	Human Rights	1, 2	**16.7** Ensure responsive, inclusive, participatory decision-making at all levels **10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status **5.2** End all forms of discrimination against women and girls everywhere **5.a** Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	**			
		Ensure equitable land acquisition and that compensation for any land that is acquired is based on the market value of the land	Human Rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and vulnerable, have equal rights to economic resources, as well as to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance **2.3** By 2030, double the agricultural productivity and incomes of small-scale food producsers, in particular women, indigenous peoples, family famers, pastoralists and fishers, including through secure and equal access to land, other resources and inputs, knowledge, financial, markets and opportunities for value addition and non-farm employment services	**			
		Avoid involuntary resettlement of communities to the extent feasible, or to minimise and mitigate its adverse social and economic impacts	Human Rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and vulnerable, have equal rights to economic resources, as well as to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance **2.3** By 2030, double the agricultural productivity and incomes of small-scale food producsers, in particular women, indigenous peoples, family famers, pastoralists and fishers, including through secure and equal access to land, other resources and inputs, knowledge, financial, markets and opportunities for value addition and non-farm employment services	**			
		Ensure that land acquisitions by governments/others have been executed properly so that the organisation does not 'inherit' land disputes	Human Rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and vulnerable, have equal rights to economic resources, as well as to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	**			
		Respect indigenous people's claims about land, which have been recognised or are being considered by appropriate authorities	Human Rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and vulnerable, have equal rights to economic resources, as well as to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	**			
		Ensure that when buying land through agents and advisers that these do not take any short cuts on the organisation´s behalf	Human Rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and vulnerable, have equal rights to economic resources, as well as to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance **2.3** By 2030, double the agricultural productivity and incomes of small-scale food producsers, in particular women, indigenous peoples, family famers, pastoralists and fishers, including through secure and equal access to land, other resources and inputs, knowledge, financial, markets and opportunities for value addition and non-farm employment services	**			

1. Development Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s):	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
1. Land governance	**I. Enter into an open dialogue with members of the community at the point of land status change and at the planning and design stage**	Hire local labour to bring benefits to the local community	Labour	6	**10.1** By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average **10.2** By 2030, empower ad promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	*			
2. Transparency and anti-corruption	**II. Actively promote greater transparency and fight corruption at all levels**	Put in place control mechanisms and systemic barriers to prevent people from having the opportunity to engage in, and to benefit from, abuses of power	Anti-corruption	10	**10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	**			
		Adopt a project-by-project process with regard to fighting corruption	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	**			
		Provide training to employees at all levels on all corruption issues and the potential legal and reputational consequences of engaging in corrupt and in-transparent practices	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	**			
		Report progress on how the organisation is integrating the four issue areas with regard to the Development Phase either within a standalone annual sustainability report or as part of an integrated financial reporting	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to integrate sustainability information into their reporting cycle	**			
		Encourage employees to raise questions or concerns without fear of consequences	Labour	6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	*			
		Jointly promote collective action through measures such as integrity pacts, anti-corruption declarations, certified business coalitions, principle-based initiatives and education and training	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms **17.9** Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation.	*			
3. Respecting workers' rights	**III. Make responsible supply chain choices that respect the protection of labour and human rights**	Carry out a thorough risk and opportunity assessment of the organisation's own overall business activity impact as well as that of its suppliers on labour and human rights	Human Rights Labour	1, 2, 3, 4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Encourage suppliers to develop their own internal labour and human rights policies	Human Rights Labour	1, 2 ,3 ,4 ,5 ,6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Only enter into business arrangements with suppliers and sub-suppliers / contractors with a proven track record of meeting certain standards with regard to respecting workers' rights	Labour	3, 4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Ensure that main contractors make responsible supply chain choices with regard to sub-contractors to ensure full compliance with national or ILO labour rights and occupational health and safety regulations	Labour	3,4,5,6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			

1. Development Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
3. Respecting workers' rights	III. Make responsible supply chain choices that respect the protection of labour and human rights	Take action to ensure the respect of workers' rights, and, in accordance with the Decent Work Agenda set forth by the International Labour Organization, provide opportunities for decent work	Labour	3, 4, 5, 6	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value 8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Establish practices to ensure a safe and healthy work environment in accordance with international labour standards	Labour	3, 4 ,5, 6	8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Play a key role in the fight against forced labour and trafficking	Labour	4	8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	**			
		Carry out due diligence with regard to dealing with suppliers or sub-contractors engaged in child labour	Labour	5	8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms 16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children	**			
		Develop strategies around non-discrimination and expand business relationships with women-owned enterprises, including small businesses, and women entrepreneurs.	Labour	6	10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard 5.5 Ensure women´s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	**			
4. Environmental stewardship	IV. Take responsibility with regard to the environment at the point of land status change and at the planning and design stage	Investigate the possibility of brownfield rather than greenfield development to ensure efficient use of land	Environment	7,8	15.4 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework Programmes on Sustainable Consumption and Production, with developed countries taking the lead	**			
		Adopt land development practices that protect existing biodiversity and land and ocean based eco-systems, enhance regeneration of biodiversity and facilitate sustainable natural resource management	Environment	7.8	15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and by 2020, protect and prevent the extinction of threatened species 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	**			
		Design new buildings and surrounding infrastructure for sustainable and more efficient use of land in urban areas	Environment	7, 8, 9	11.3 By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and human settlement planning and management in all countries	**			
		Carry out early environmental impact assessments during the planning and design process	Environment	7	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	**			

1. Development Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
4. Environmental stewardship	**IV. Take responsibility with regard to the environment at the point of land status change and at the planning and design stage**	Choose responsibly sourced green construction materials to reduce the embodied impacts related to energy, waste, carbon and water	Environment	8, 9	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse **7.3** By 2030, double the global rate of improvement in energy efficiency **6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity **13.2** Integrate climate change measures into national policies, strategies and planning	**			
		Seek to ensure that own responsible resource management practices extend to suppliers and contractors and should confirm that the entity taking receipt of their waste is properly licensed to do so	Environment	7, 8	**12.7** Promote public procurement practices that are sustainable, in accordance with national policies	**			
		Consider carrying out a full Life Cycle Assessment (LCA) – ideally coupled with Life Cycle Costing (LCC) – in order to assess different project alternatives to support decision-making	Environment	7, 8	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **15.9** By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	*			
		Provide appropriate training and undertake wider advocacy efforts in relation to workers and members of the community especially to those in small- and medium-scale enterprises to consider the environment in their daily working practices	Environment	8	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	*			
5. Quality of planning, design and construction	**V. Deliver safe, high-quality and well-designed buildings**	Ensure that any building constructed is fit for purpose and of good architectural quality	Human rights	1, 2	**11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	**			
		Ensure that buildings have been constructed to safely sustain reasonably foreseeable loads and impacts, including ground movement, weather events, fire, and seismic movements and future impact of climate change, applicable to the building's potential future use and local geographical factors	Environment	7, 8, 9	**1.5** By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters **11.5** By 2020, significantly reduce the number of deaths caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations **11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels **13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	**			
		Ensure that sites are free of contaminants and other geo-technical hazards that might damage the building, affect its stability or be a health or safety hazard to occupiers, neighbours and communities in the vicinity	Human Rights Environment	1, 2, 7, 8	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment	**			

1. Development Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
5. Quality of planning, design and construction	V. Deliver safe, high-quality and well-designed buildings	Apply local and, where appropriate, international building codes and local planning regulations (and, where feasible, quality and environmental management standards, such as ISO 9001 and ISO 14001) incorporating best-practice structural and safety standards	Environment	7, 8	**11.3** By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	**			
		Carry out a sustainability assessment of the planned building through either national or commercial assessment tools and/or methodologies to evaluate the optimal design solution in terms of economic, social and environmental benefits as well as a means of quality-assurance during the design and construction process	Environment	7, 8,9	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Plan for the likely uses (and abuses) of the building by future occupiers and ensure that safety standards are adequate in that context and allow for future adaptability to accommodate changing user preferences and to allow for a significant change of use without major construction taking place	Environment	7, 8, 9	**11.1** By 2030, ensure access to safe, affordable housing and basic services and upgrade slums **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			
		Design and construct for minimum resource use with future refurbishment and recyclability of the building and its components in mind so as to minimise waste impact and waste disposal costs during the Recovery Phase	Environment	7, 8, 9	**7.2** By 2030, increase substantionally the share of renewable energy in the global energy mix **7.3** By 2030, double the global rate of improvement in energy efficiency **12.4** By 2020, achieve the environmentally sound management of chemcial and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air , water and soil in order to minimise their adverse impacts on human health and the environment	**			
		Build in design features aimed at improving the well-being of future occupants within the building, such as e.g. the provision of adequate levels of light, indoor air quality, common areas, etc.	Human Rights	1, 2	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	**			
		Check before entering into contractual agreements that the construction industry professionals the organisation is employing are adequately qualified and knowledgeable	Environment	7, 8	**12.7** Promote public procurement practices that are sustainable, in accordance with national policies **12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	**			
		Put in place mechanisms (such as the protection of whistle blowers) to verify that any mistakes/poor judgement (or, in the worst cases, deliberate failings) will not go undetected	Labour	3,10	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Seek to involve stakeholders down the value chain, such as facility or building managers to feed their expertise and user experience into the overall design and construction process	Environment	7, 8 ,9	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.3** Improve education, awreness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	**			
		Adopt the so-called 'soft-landings' approach to deliver safe and high performing buildings, involving a formal handover process to the owner/user upon project completion and ensuring that all construction related data is made available to the owner/user for an efficient operation of the building in the Real Estate Use Phase	Environment	7, 8, 9	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	**			

2. Real Estate Use Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
1. Transparency and disclosure	I. Improve internal processes for identifying and addressing corrupt practices and for increasing overall corporate transparency	Carry out a risk assessment and due diligence related to corrupt practices, such as money laundering	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	**			
		Put in place robust internal anti-corruption compliance programmes and whistle-blower policies	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	**			
		Conduct anti-corruption training sessions for employees and their contractors, suppliers and clients	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	**			
		Extend anti-corruption compliance policies to suppliers and put deterrents to non-compliance in place where possible	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	**			
		Create a transparent framework of requirements for type, extent, format and frequency of building data/information handling and amend contractual arrangements whenever real estate services, such as facility management, are outsourced	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Take a holistic approach to handling building data/information at all corporate levels by implementing a Corporate Real Estate Sustainability Management (CRESM)	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Report real estate performance data as well as progress on integration of the four Global Compact issue areas with regard to the Real Estate Use Phase either within a standalone annual sustainability report or as part of an integrated financial reporting	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Evaluate facility and asset managers' performance against responsible business targets	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **12.2** By 2030, achieve the sustainable management and efficient use of natural resources **13.2** Integrate climate change measures into national policies, strategies and planning **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	*			
		Ensure, whenever external consultants/real estate professionals are engaged, that they have adequate skills and knowledge of responsible business in relation to real estate use, operation and investment	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	*			
		Benchmark facilities to determine the level of performance relative to peer buildings	Human rights Labour Environment Anti-corruption	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	*			
		Engage in collective action including sector-wide or regional initiatives to collaboratively fight corruption and increase real estate market transparency	Anti-corruption	10	**16.5** Substantially reduce corruption and bribery in all their forms	*			

2. Real Estate Use Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s):	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
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2. Environmental stewardship	**II. Make environmental stewardship an integral part of the daily operation of the building**	Contractually require information from the landlord or seller and real estate professionals involved in the sale or rental of a building as to whether there are any specific environmental issues affecting the property before signing contracts	Environment	7	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Make resource efficiency and monitoring an integral part of facilities management, whether in-house or outsourced, for example, through adopting ISO 50001 for energy and/or ISO 14001 for general resource consumption in operation	Environment	7, 8	**7.3** By 2030, double the rate of improvement in energy efficiency **12.2** By 2030, achieve the sustainable management and efficient use of natural resources **13.2** Integrate climate change measures into national policies, strategies and planning	**			
		Include resource efficiency as a core criterion when entering into new procurement contracts or when renegotiating existing one	Environment	7, 8, 9	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **12.7** Promote public procurement practices that are in accordance with national policies and priorities	**			
		Introduce operating procedures that minimise the use of energy and water	Environment	7, 8, 9	**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity **7.3** By 2030, double the global rate of improvement in energy efficiency **13.2** Integrate climate change measures into national policies, strategies and planning	**			
		Adopt a maintenance strategy that includes modern, energy efficient lighting fittings, motion-controlled lighting in common areas and low-flow water plumbing and taps	Environment	7, 8, 9	**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity **7.3** By 2030, double the global rate of improvement in energy efficiency **13.2** Integrate climate change measures into national policies, strategies and planning	**			
		Investigate the feasibility of buildings becoming self-sufficient, e.g. by creating and producing as much renewable energy on site as possible	Environment	7, 8, 9	**7.2** By 2030, increase substantially the share of renewable energy in the global energy mix **13.2** Integrate climate change measures into national policies, strategies and planning	**			
		Avoid unnecessary waste from refurbishment at the time of vacating the premises at the end of a lease	Environment	7, 8, 9	**11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			
		Take practical steps to reduce daily waste from business activities within the building	Environment	7, 8	**11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			
		Optimise resource consumption by capturing consumption data (Metering / BMS / BIM)	Environment	7, 8, 9	**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity **7.3** By 2030, double the global rate of improvement in energy efficiency	*			

2. Real Estate Use Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s):	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
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2. Environmental stewardship	**II. Make environmental stewardship an integral part of the daily operation of the building**	Adopt an overall Environmental Management System for all daily operations, setting out clear targets and key performance indicators to measure individual departments' and subsidiaries' performance across the organisation	Environment	7, 8, 9	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning **13.2** Integrate climate change measures into national policies, strategies and planning	*			
		Support life-cycle optimisation of financial and environmental performance through total cost of ownership (TCO) budgeting	Environment	7, 8, 9	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources	*			
		Investigate the possibility of integrating environmental clauses into lease contracts ('green leases') renting or leasing a building	Environment	7, 8, 9	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **13.2** Integrate climate change measures into national policies, strategies and planning	*			
		Raise awareness about resource consumption issues by displaying real-life energy and general resource consumption and/or carbon footprint onscreen in areas frequented by employees and clients	Environment	8, 9	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning **13.2** Integrate climate change measures into national policies, strategies and planning	*			
		Opt for landscaping solutions that reduce water usage (e.g. by using native plants that survive without extra watering) and that enhance biodiversity	Environment	7, 8	**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	*			
		Set up resource or 'green' teams across departments and make environmental stewardship an integral part of employees' performance reviews to enable regular resource use audits and implementation across the organisation	Environment	8	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning **13.2** Integrate climate change measures into national policies, strategies and planning	*			
3. Treatment of tenants and communities	**III. Interact with tenants and local communities**	Adopt non-discrimination policies with regard to choosing tenants	Human Rights	1, 2	**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status **10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard **11.3** By 2030, ensure access for all to adequate, safe and affordable housing and basis services and upgrade slums	**			

2. Real Estate Use Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
3. Treatment of tenants and communities	**III. Interact with tenants and local communities**	Ensure that all rental agreements and contracts are fair and equitable	Human Rights	1, 2	**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status **10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard **11.3** By 2030, ensure access for all to adequate, safe and affordable housing and basis services and upgrade slums	**			
		Ensure an ongoing, open dialogue with tenants and put in place an adequate grievance process	Human Rights	1, 2	**16.7** Ensure responsive, inclusive, participatory decision-making at all levels	**			
		Develop ongoing engagement programmes to increase community communication and involvement, increase community involvement and specifically support vulnerable groups such as women children, the elderly, persons with disabilities, ethnic and racial minorities and indigenous communities	Human Rights	1, 2	**16.7** Ensure responsive, inclusive, participatory decision-making at all levels **10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status **5.2** End all forms of discrimination against women and girls everywhere	**			
		Respect all matters related to cultural and spiritual heritage within the community such as ancestral burial grounds, places of worship, etc.	Human Rights	1, 2	**11.4** Strengthen efforts to protect and safeguard the world´s cultural and natural heritage.	**			
		Ensure, whenever a building has access to the public, that all members of the communities can enter the premises regardless of gender, age, race, religion, disability, sexual orientation and ethnicity	Human Rights	1, 2	**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status **5.2** End all forms of discrimination against women and girls everywhere	**			
		Assist groups, associations and agencies that are working for the good of the community they are located in	Human rights	1, 2	**17.17** Encourage and promote effective, public–private and civil society partnerships, building on the experience and resourcing strategies of partnerships	*			
		Set 'local sourcing' as a target under procurement policies, giving priority both to the employment and occupational development of community members as well as to the use of local raw materials and the promotion of local processing of such materials	Labour Environment	6, 8	**8.3** Promote development-orientated policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-small- and medium-sized enterprises, including through access to financial services **8.4** Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework Programmes on Sustainable Consumption and Production, with developed countries taking the lead **11.c** Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilising local materials	*			
4. Health, safety and well-being of occupants	**IV. Provide a safe and healthy work environment for employees**	Put in place policies and processes targeted at health and safety within the building and access routes to and from the building	Human Rights Labour	1, 2, 4, 5,6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Ensure that statutory health and safety regulations are adhered to both by employees as well as subcontracted staff by holding regular training sessions	Human Rights Labour	1, 2, 4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Provide access for people with mobility problems to all parts of the premises	Human Rights	1, 2, 6	**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	**			

2. Real Estate Use Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s):	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
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4. Health, safety and well-being of occupants	**IV. Provide a safe and healthy work environment for employees**	Provide access to water, sanitation and hygiene facilities for building occupants, especially taking into account the privacy needs of women	Human Rights	1,2	**6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all **6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	**			
		Disclose potential public health risks posed by the building and its operations	Human Rights	1, 2	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination **12.4** By 2020, achieve the environmentally sound management of chemical and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment	**			
		Address potential issues of security and privacy for both men and women and implement a zero-tolerance policy towards all forms of violence at work, including verbal and/or physical abuse and prevent sexual harassment	Human Rights Labour	1, 2 ,6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **16.b** Promote and enforce non-discriminatory laws and policies for sustainable development	**			
		Ensure adequate levels of indoor air quality by using products and materials that avoid or minimise the use of harmful toxins and chemicals such as carcinogenic substances and volatile organic compounds, persistent organic pollutants and hazardous chemical substances, through certified sustainable procurement	Human Rights Environment	1, 2, 7	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	**			
		Identify the scope for improving working areas (including increased exposure to natural daylight, the provision of outdoor recreational green spaces and the reduction of noise pollution)	Human Rights	1, 2	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **11.7** By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	**			
		Encourage and promote walking to work or the use of bicycles by establishing incentive schemes and by providing storage and shower facilities on the premises	Environment	8	**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **13.2** Integrate climate change measures into national policies, strategies and planning	*			
5. Decent work & human rights in the value chain	**V. Ensure decent work conditions for employees and subcontracted workers**	Ensure that workers' rights are respected across their organisation, including among subsidiaries	Labour	3, 4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Make reference to the Fundamental Principles and Rights at Work in contracts with subcontractors to ensure that the same principles apply to subcontracted workers as would apply to the organisation's own employees	Labour	3, 4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Ensure that there is no forced labour nor child labour in own and subcontractors´ operations	Labour	4, 5	**8.7** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	**			

2. Real Estate Use Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status Action implemented	Action partly implemented	Action not yet implemented
5. Decent work & human rights in the value chain	**V. Ensure decent work conditions for employees and subcontracted workers**	Ensure proper ongoing maintenance and evaluation of property for safety and health concerns	Human Rights	1, 2	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Pay attention to occupational health and safety issues and the use of appropriate protective personal equipment where necessary	Human Rights	1, 2	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Incorporate the issue of children's rights into corporate policies and codes of conduct	Labour	4, 5	**8.7** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms **16.2** End abuse, exploitation, trafficking and all forms of violence against and torture of children	**			
		Ensure that wages paid to own employees and those of subcontractors are at least in line with minimum wage thresholds in the country of operation and are equal between men and women	Labour	6	**8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.	**			
		Develop a diversity management strategy and promote diversity and gender equality within own workforce and also amongst subcontractors	Labour	6	**5.1** End all forms of discrimination against all women and girls everywhere **5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life **10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status **10.3** Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	**			

3. Recovery Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
1. Strategic site-use reevaluation	**I. Carry out a thorough economic, social and environmental building and site-use re-evaluation**	Review the strategic and long-term requirements for the existing building/site for the organisation and/or for its clients to identify the extent to which these are served by the existing site facilities	Human rights Environment	1, 2, 7, 8, 9	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	**			
		Carry out a thorough and transparent cost-benefit analysis of potential refurbishment/ redevelopment options	Human rights Environment Anti-corruption	1, 2, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Carry out a transparent sustainability assessment of the building/site through either national or commercial assessment tools and/or methodologies to evaluate the optimal refurbishment/redevelopment option in terms of economic, social and environmental benefits	Human rights Environment Anti-corruption	1, 2, 7, 8, 9, 10	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Consider the social impact of changing the use of the building, such as future affordability after gentrification	Human rights	1, 2	**11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums **16.b** Promote and enforce non-discriminatory laws and policies for sustainable development	**			
		Comply with heritage and archaeological guidelines and integrate them into the reconstruction or rehabilitation evaluation process	Human rights	1, 2	**11.4** Strengthen efforts to protect and safeguard the world's cultural and natural heritage	**			
2. Refurbishment and retrofitting	**II. Create conditions for carbon mitigation and resource use minimisation during refurbishment and redevelopment**	Holistically consider the range of available refurbishment and retrofitting interventions and solutions depending on the respective characteristics and performance of the existing building	Environment	7, 8, 9	**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	**			
		Assess the available refurbishment and retrofitting interventions related to environmental risks and select appropriate and cost effective solutions that optimise energy efficiency and minimise carbon dioxide (CO_2) emissions of operation and materials used	Environment	7, 8, 9	**7.3** By 2030, double the global rate of improvement in energy efficiency **13.2** Integrate climate change measures into national policies, strategies and planning	**			
		Consider the level of building resilience against environmental risks at the location/site, such as flooding, subsidence, etc. that may be caused by projected climate change impacts	Environment	7, 8	**11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	**			
		Ensure that best practice ILO human rights and labour protection criteria are incorporated into specifications and all other contract documents when refurbishing a building	Human rights Labour	1, 2, 3, 4, 5, 6	**12.7** Promote public procurement practices that are sustainable, in accordance with national policies and priorities **8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
3. Waste management, resource conservation and recycling during demolition	**III. Prepare an independent method statement and risk assessment for safe and efficient waste management at demolition stage**	Arrange for the preparation of a pre-demolition audit and deconstruction schedule as the basis for developing the method statement, defining how to both undertake the demolition safely and to maximise the quantity of reclamation material	Human rights Environment	1, 2, 7, 8	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			

3. Recovery Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
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3. Waste management, resource conservation and recycling during demolition	**III. Prepare an independent method statement and risk assessment for safe and efficient waste management at demolition stage**	Arrange for the preparation of a risk assessment and method statement before dismantling any structure, disconnecting services or demolishing civil works, covering: work sequencing; site-specific work methods; material recycling targets and specification; protective equipment and clothing; emergency accident procedures; and issuance of a completion certification	Human rights Labour Environment	1, 2, 4, 5, 6, 7, 8, 10	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			
		Ensure that waste management strategies encompass the entire process from demolition, disposal of waste, waste haulage and final disposal	Environment	7, 8	**12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			
		Ensure that all local legal requirements are complied with and certification for removal of waste materials from site is available for inspection	Environment Anti-corruption	7, 8, 10	**12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse **16.5** Substantially reduce corruption and bribery in all their forms	**			
		Ensure that provision is made for handling site waste water to protect groundwater and existing natural water courses and drains	Environment	7, 8	**6.4** By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing the recycling and safe reuse globally **6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes **14.1** By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	**			
		Stipulate compliance to international safety standards and the use of management systems from demolition and recycling specialists	Human rights Labour Environment	1, 2, 4, 5, 6, 7, 8	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**			
		Proactively adopt international safety standards and management systems if the organisation is the main or sub-contractor at the point of demolition and waste management	Human rights Labour	1, 2	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Observe the decent work and labour procedures outlined in ILO mandates in the areas of employment, training, conditions of work and life and industrial relations during demolition	Labour	3, 4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			

3. Recovery Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle[s] :	Supports implementation Sustainable Development Goal[s]:	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
3. Waste management, resource conservation and recycling during demolition	**III. Prepare an independent method statement and risk assessment for safe and efficient waste management at demolition stage**	Ensure the application of the highest standards of occupational health and safety, pay particular attention to the ILO safety standards for demolition and protection against biological agents when considering these standards and ensure the use of appropriate protective personal equipment throughout the whole demolition and waste management process	Labour	4,5,6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution	**			
		Ensure that surrounding communities are not affected by either the demolition works or the site waste disposal	Human rights Environment	1, 2, 7,8, 9	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment	**			
		Take effective measures to ensure that materials, especially those of a hazardous nature are not stored or disposed of on indigenous peoples' lands or territories without their free, prior and informed consent	Human rights Environment	1, 2, 7, 8	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment	**			
		Comply with the following obligations under international and national legislation and communal customs as part of administering any demolition process: health and safety, including addressing perceived public health and environmental concerns, heritage and archaeological issues, nature conservation, biodiversity protection and democratic choices of local communities, including indigenous people and considerate contractor schemes	Human rights Environment Labour	1, 2, 7, 8	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment **3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment **15.9** By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	**			
		Process demolition materials for reuse and/or resource recovery, preferably on site	Environment	7, 8	**12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	*			
4. Brownfield regeneration	**IV. Minimise impact on the environment and communities during brownfield regeneration**	Define as part of the process of developing a strategy for using brownfield sites, the liabilities of the past and present parties that have been involved, in accordance with the "polluter pays" principle	Environment	7	**15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	**			
		Review potential planning, legal and environmental restrictions that may lead to conflicts of interest in how the brownfield land was utilised and how it may be used in the future	Human rights Environment	1, 2, 7	**1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance **11.3** By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management planning in all countries	**			

3. Recovery Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
4. Brownfield regeneration	**IV. Minimise impact on the environment and communities during brownfield regeneration**	Ensure the application of the highest standards of occupational health and safety and the use of appropriate protective personal equipment during brownfield regeneration and rehabilitation of sites	Labour	4, 5, 6	**8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**			
		Examine the current impact on local communities of previous environmental damage and spillages, including an assessment of the future effect on the local community of using the brownfield site, particularly with regard to the presence of hazardous materials and other indirect issues that may affect the site clean-up process	Human rights Environment	1, 2, 7, 8	**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution **6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally **11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment	**			
		Consider general community needs including food and housing, especially those of indigenous peoples, who may have been the subject of internal displacement during the original development	Human rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance **11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	**			
		Prepare consultation design materials which can be presented to existing communities in order to develop future proposals for the site that are acceptable to existing and indigenous communities	Human rights	1, 2	**1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance **12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature **16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels	*			
5. Land recovery and rehabilitation of site	**V. Undertake an environmental impact assessment with regard to land recovery and rehabilitation**	Review the local statutory and regulatory requirements for preparing Environmental Impact Assessments (EIA) and, if necessary, seek legal advice and clarification	Environment	7, 8	**15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	**			
		Commission specialists to undertake an environmental screening process to identify whether a full environmental impact assessment of the site is required	Environment	7, 8	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	**			

3. Recovery Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
5. Land recovery and rehabilitation of site	V. Undertake an environmental impact assessment with regard to land recovery and rehabilitation	Identify which specialist studies (general wildlife surveys, reviews of flora, fauna, agricultural, ecological, hydrological, geomorphological, geological, historic/cultural and archaeological) may be required to support a full environmental impact assessment if required and recruit the appropriate specialists to carry out these studies	Environment	1, 2, 7, 8	**12.2** By 2030, achieve the sustainable management and efficient use of natural resources **15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements **11.4** Strengthen efforts to protect and safeguard the world´s cultural and natural heritage **11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	**			
		Undertake a survey and evaluation of the condition of the site to assess what clean up and rehabilitation technologies may be required to bring it up to current and future projected environmental standards, based on assessing site development features, including natural and geological hazards and man-made factors	Environment	7, 8	**12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment **1.5** By 2030, build the resilience of the poor and those on vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters **11.5** By 2020, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations **11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels **13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries **15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements **15.3** By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	**			

3. Recovery Phase

Key Issues	Action Item	Specific Actions	Relates to UN Global Compact issue area(s):	Relates to UN Global Compact Principle(s) :	Supports implementation Sustainable Development Goal(s):	Priority	Company status		
							Action implemented	Action partly implemented	Action not yet implemented
5. Land recovery and rehabilitation of site	**V. Undertake an environmental impact assessment with regard to land recovery and rehabilitation**	Develop an integrated action plan creating multiple uses and benefits by taking account the competing demand for high quality rural land, forestry/water management/bio-energy/food security/areas for wildlife/livestock, interaction with local communities, policies on food and energy conservation, sustainable intensification of agricultural practices, promotion of native species, eco-system valuation – land, forestry, water and marine resources, unblocking of animal migration routes – requiring planning to create connected greenways, swales and wildlife corridors	Human rights Environment	1, 2, 7, 8	**2.1** By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round **2.3** By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other resources and inputs, knowledge, financial, markets and opportunities for value addition and non-farm employment services **2.4** By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality **15.1** By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements **15.5** Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species **15.8** By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species **15.9** By 2020, integrate ecosystem and biodiversity values into national planning, development processes, poverty reduction strategies and accounts **7.2** By 2030, increase substantially the share of renewable energy in the global energy mix 14.1 By 2025, prevent and significantly reduce marine pollution of kinds, in particular from land-based activities, including marine debris and nutrient pollution **14.2** By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for restoration in order to achieve healthy and productive oceans **6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	**			

8.0 Issue glossary

The Issue Glossary provides more in-depth background information to the key issues identified in Chapters 3, 4 and 5

8.1 Development Phase

8.1.1 Land governance

Relevant for implementing SDGs:

The following inter-related issues are crucial with regard to *land governance* in the Development Phase:

a. **Acquisition:** One of the biggest issues in land acquisition is the land price as this affects the type of development that is possible. Land value is a significant issue for sustainable business practices as often the cost of the building is relatively small compared to the land value. High land prices are often making both residential and commercial premises unaffordable to many people and organisations.

The developer is stuck in a difficult position of having acquired the land at high cost and then having to deliver a reasonable return on his investment – which excludes certain forms of development and uses.

Tenure (or ownership) and its security is considered one of the most central and controversial issues within the land acquisition process. Tenure and land rights can range from informal customary forms of ownership to more formal leasehold and freehold titles. Where ownership is unclear (frequently because the land is unregistered or because of inadequate land registry input) and the use of the land is uncontrolled, land conflicts can arise. Examples of such conflicts include the contentious issues of 'land grabbing' and gender-based land ownership discrimination[44], both of which affect the local community's access to shelter, basic resources, minerals, and natural resources on which they are dependent for food security and subsistence.[45] Tenure rights and their security are a major issue in many countries with related problems in effective land administration and management systems. The World Bank believes that nearly 70% of all land and property in sub-Saharan Africa is unregistered and thereby exhibiting land rights issues[46].

b. Indigenous peoples: There is no single definition to identify indigenous peoples.[47] The UN estimates that there are roughly over 370 million indigenous people living in over 90 countries. Their traditional knowledge is an invaluable resource. It is estimated that, while indigenous peoples occupy only 20% of the world's land surface, they steward 80% of the planet's biodiversity.

The international standards set by the UN Declaration on the Rights of Indigenous Peoples (UN Declaration)[48], the International Finance Corporation's (IFC) Performance Standard 6[49], all have provisions relating to the customary rights of indigenous peoples to lands, territories and resources. ILO Convention No 169[50], the only international binding international treaty on indigenous peoples open to ratification, includes specific rights of the indigenous peoples regarding ownership and possession of the lands which they traditionally occupy.

The rights of indigenous peoples are often put at risk by land development and, in particular, the construction of large infrastructure projects such as dams, ports and major road projects through inadequate engagement and consultation with the affected stakeholders, businesses and local communities. Negative social consequences include the forced displacement and resettlement of communities from their traditional lands[51], potential security risks of displaced women and their dependents as well as a potential rise in crime and prostitution through the influx of non-local construction workers.

According to the World Bank, "*involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social, and environmental risks: production systems are dismantled; people face impoverishment when their productive assets or income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater; community institutions and social networks are weakened; kin groups are dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost. This policy includes safeguards to address and mitigate these impoverishment risks.*"[52]

c. Right to housing or adequate living conditions: Shelter fulfils physical, psychological, social and economic needs, including the provision of a place to work. As recognised under Article 25 of the Universal Declaration of Human Rights, every person "*has the right to a standard of living adequate for the health and well-being of himself and of his family*".[53] Conflicting land interests, often resulting from population growth or intensified economic development, put pressure on this basic right. The negotiation of land agreements in particular can prove challenging when determining how development of the land is likely to affect existing settlements or shelter. Evictions and relocations can result in individuals being rendered homeless or

vulnerable to the violation of human rights. Adequate financial compensation or provision of suitable alternative land may satisfy the main owner, but unless formal title to the land is also provided, may not protect the occupants' rights to housing.

7.1.2 Transparency and anti-corruption

Relevant for implementing SDGs:

The UN Convention against Corruption[54], the underlying legal instrument for the UN Global Compact's 10th Principle, calls for ratifying states to outlaw, at a minimum:

- bribery of public officials;
- embezzlement;
- trading in influence;
- abuse of function;
- illicit enrichment by public officials;
- bribery and embezzlement in the private sector;
- money laundering; and
- obstruction of justice.

Although the Convention is legally binding only on countries that have ratified it, its values and principles are also applicable to the global business community. The principles enshrined in the Convention can serve as an inspirational tool for companies adopting or reviewing internal anti-corruption policies, strategies and measures.

The following issues are crucial with regard to *transparency and anti-corruption*[55]:

a. Bribes/Facilitation payments: A bribe or 'facilitation payment', as it is sometimes known is "the offering, promising, giving, accepting or soliciting of an advantage as an inducement for an action which is illegal, unethical or a breach of trust. Inducements can take the form of gifts, loans, fees, rewards or other advantages (taxes, services, donations, etc.)"[56] In the practical context of development this may include charging illegal site entry gate fees and tacit complicity in the minor theft of materials delivered onto construction sites. Although these activities may occur on a small scale, they can have a substantial impact on the costs of construction. They also can cause delays to contract completion.

Corruption frequently starts with the bribing of local officials responsible for issuing planning and construction consents. The offering of such bribes is particularly damaging where it induces local officials to circumvent the rights of local communities or to permit the misappropriation of bio-habitats or protected natural resources (e.g. fresh water sources and forests), to facilitate a land sale or lease. Based on a survey of more than 114,000 respondents in 107 countries, Transparency International's 'Global Corruption Barometer 2013' reported that one in five respondents stated that they had paid a bribe related to land administration services.[57]

b. **Bid-rigging:** Bid-rigging refers to the placement of bids for a construction contract based on the use of illegal insider information. The incorrect structuring of the tendering process for construction contracts can create a situation where bid-rigging can occur, including officials taking 'kickbacks' in exchange for confidential information on competing bids or giving certain bids preferential consideration. Bid-rigging also can occur through potential contractors colluding to fix rates before tendering.

8.1.3 Respecting workers' rights

Relevant for implementing SDGs:

The following issues are crucial with regard to *respecting workers' rights* in the Development Phase:

a. **Freedom of association and collective bargaining:** Freedom of association and collective bargaining are UN Global Compact Principles and enjoy international consensus. Workers have the right to organise and to bargain collectively.[58] Freedom of association '*implies a respect for the right of all employers and all workers to freely and voluntarily establish and join groups for the promotion and defence of their occupational interests*.' An essential element of freedom of association is collective bargaining which is defined as "*a voluntary process through which employers and workers discuss and negotiate their relations, in particular terms and conditions of work*."[59]

The treatment of unionised workers is an area of particular concern in the sector, especially the practices of 'blacklisting' of unionised workers and 'double-breasting'. These practices can infringe the ability of workers to exercise their rights. 'Blacklisting' involves the naming of persons who are involved in trade unions or who have actively raised concerns about a company's operations on a list shared with other companies to prevent such persons from gaining employment. Businesses found to be guilty of blacklisting have faced being barred from public contracts, being prosecuted under data protection legislation and have had to pay into compensation schemes set up to help the victims of such practices.

In cases of 'double-breasting' a multi-establishment employer runs both unionised and non-unionised operations, often to side-step agreed labour contracts.

b. **Non-discrimination:** Discrimination in employment and occupation refers to practices that have the effect of placing certain individuals in a position of subordination or disadvantage in the labour market or the workplace because of their race, colour, religion, sex, political opinion, national extraction, social origin, age, sexual orientation, HIV/AIDS status, disability, trade union membership or activity, or any other attribute which bears no relation to the job to be performed.[60]

Construction workers in particular face discrimination based on their race, social origin, national extraction, as well as sexual orientation and gender identity. Gender discrimination is particularly problematic. This is because the construction sector remains male dominated, due largely in part to the "*mainstream notion of it being an industry appropriate only for men*".[61] Gender discrimination results in low labour force participation rates for women due to significant barriers, including gender biases and unequal pay. For example, in the US, only 9% of the construction workers are women[62] with this figure being even lower on a global scale.

c. **Occupational health and safety:** More GDP is lost globally in work-related injuries and diseases than that of the entire GDP of Africa, the Arab States and South Asia combined and amounts to more than all official development assistance to the world's developing countries.[63] According to the ILO, at least 60,000 people are killed globally every year on construction sites. The construction industry accounts for almost one in five of all fatal workplace accidents.[64] The main causes of death and injury are falls, crushes, impacts and electrocution. Common health problems caused by working in construction may relate to exposure to hazardous substances such as solvents, lead and asbestos and may include deafness, musculoskeletal disorders and cancer.[65] These substances can also have a negative impact on the reproductive health of women and men working in construction or materials extraction. This issue is exacerbated in countries where construction workers represent a large portion of the overall workforce. The treatment and conditions of workers involved in the construction supply chain, such as in the extraction and production of construction materials, especially overseas, is often difficult for developers to monitor.

Failure to provide safe working conditions and the resulting subsequent injuries to, and deaths of, employees is an issue that gains great attention from the press and from international lobbying groups. There is also the immeasurable human suffering caused by death and injury above and beyond the economic costs of absenteeism, work stoppages, construction delays, and turnover of workers. ILO guides concerning Occupational Safety & Health (OSH) in construction include *Safety and health in construction*[66] and *Safety and health in building and civil engineering work*[67].

d. **Forced labour:** Forced labour is "*any work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily.*"[68] In essence, people are in a forced labour situation if they enter work or service against their freedom of choice, and cannot leave it without penalty or the threat of penalty. This does not have to be physical punishment or constraint; it can also take other forms, such as the loss of rights or privileges (see Table 8.1).

Forced labour is a global phenomenon that affects every region, country and economic sector, and

workers in both formal and informal employment relationships. In construction, many of them are working on site, in brick kilns or are breaking stones in quarries. There are certain categories of workers that are more vulnerable to coercion than others. Some are at risk because of their ethnic background, relative poverty or irregular migrant status.

e. **The rights of migrant workers:** International labour standards provide for the specific protection of migrant workers. International labour standards do not distinguish between migrant workers and nationals; they should enjoy the same rights as all other workers. However, the reality is that in the construction sector migrant workers are at particular risk of human rights violations, including those involving forced labour. Particular areas of concern are excessive working hours, poor living conditions, threats of non-payment and deportation, the illegal retention of identity documents and the withholding of salaries, the charging of recruitment fees to workers, the exploitation of women, and the procurement of workers from recruitment agencies engaged in bonded labour or human trafficking.

Table 8.1	Identifying forced labour in practice[69]

Lack of consent to work (the 'route' into forced labour)	Menace of a penalty (the means of keeping someone in forced labour)
Birth/ decent into 'slave' or bonded status	Physical violence against worker or family or close associates
Physical abduction or kidnapping	Sexual violence
Sale of person into the ownership of another	Imprisonment or other physical confinements
Physical confinement in the work location – in prison or in private detention	Financial penalties
Psychological compulsion, i.e. an order to work, backed up by a credible threat of a penalty for non-compliance	Denunciation to authorities (police, immigration, etc.) and deportation
Induced indebtedness (by falsification of accounts, inflated prices, reduced value of goods or services produced, excessive interest charges, etc.)	Exclusion from future employment
Deception of false promises about types and terms of work	Exclusion from community and social life
Withholding and non-payment of wages	Removal of rights and privileges
Retention of identity documents or other valuable personal possessions	Deprivation of food, shelter or other necessities
	Shift to worst working conditions
	Loss of social status

Table 8.2	Minimum Age for Admission to Employment or Work[70]	
	Developed countries	**Developing countries**
Regular work	15 years	14 years
Hazardous work	18 years	18 years
Light work	13 years	12 years

The plight of construction and material extraction site workers (particularly migrant workers) suffering such inhumane treatment are coming under increasing legal and media scrutiny around the world. These practices not only impact the affected workers and the reputation of the companies involved (including those companies working with, or obtaining supplies from companies that inadequately protect their migrant workforce) but also the international reputation of the sector generally.

f. **Child labour:** Child labour is work that is harmful to the physical, social, mental, psychological and spiritual development of children, often depriving them of education and exposing them to work that is likely to endanger their health and safety. Two ILO conventions (Minimum Age Convention No. 138[71] and the Worst Forms of Child Labour Convention No. 182[72]) provide the framework for national law to prescribe a minimum age for admission to employment or work: children must not be less than the age for completing compulsory schooling, and in any case not less than 15 years. Lower ages are permitted for transitional periods, generally in countries where economic and educational facilities are less well-developed (see Table 8.2). Child labour is not the same as 'youth employment'; as from the minimum working age, young people should be able to engage in decent work, but should still be protected from hazardous work and other worst forms of child labour.[73]

Child labour is a significant issue in the sector, particularly in relation to raw material sourcing and procurement within the supply chain, such as working in quarries or brick kilns or on construction sites. Child labour is illegal in most countries. Companies that employ child labour or transact with those that do along the supply chain will become implicated in allegations of complicity in human rights abuses. The responsibility to respect human rights, as highlighted in the Guiding Principles, entails companies to ensure that there is no child labour in their supply chains.

8.1.4 Environmental stewardship

Relevant for implementing SDGs:

The following issues are crucial with regard to *environmental stewardship* in the Development Phase:

a. **Natural resources consumption:** An enormous amount of extracted non-energy minerals (such as stone, sand and gravel) are used to supply materials for the construction industry, making the construction industry the nation's largest consumer of natural resources.

Around half of all non-renewable natural resources are used in land development and construction, either as manufactured materials, building components, equipment, etc., or in associated transportation. Many construction materials are extremely energy and water intensive in their production, and are becoming exceedingly scarce.[74] There are also biodiversity impacts in the supply chain, e.g. through the use of quarried material.

Water conservation is an important consideration when choosing construction materials. Significant quantities of water are used, for example, in the mixing of concrete and plaster. These issues are typically given inadequate consideration during the design stage, resulting in a failure to maximise conservation benefits or minimise the potential future impact of the relevant development. Project design decisions relating to the building and its grounds also affect ongoing water use and storm water management and biodiversity.

b. **Energy conservation:** This is an essential pillar of resource management and an integral part of development assessment processes. Energy conservation efforts are affected by the choice of materials and the level of energy consumed due to location, transportation and density of development and design.[75] Project design ultimately defines the energy efficiency of the Real Estate Use Phase and the related embodied impacts.

c. **Choice of design and construction materials:** Important choices need to be made during the design phase of any development project regarding use of materials. Inappropriate decisions here can result in significant environmental impacts such as waste, carbon emissions and pollution. In addition, the choice of design and construction materials can also influence worker and occupant health and safety. In addition, the choice of building materials also plays a role in the development of urban 'heat islands', which can potentially affect human thermal comfort, urban air and water quality, local meteorological conditions, and the energy use of nearby buildings due to increased need for air-conditioning.

Furthermore, increased surface water run-off is another issue linked to the choice of design and materials, creating a series of problems that are likely to get worse as global development continues, such as flooding and water pollution caused by pollutants contained in construction materials being transported into surrounding water courses. These problems are often overlooked at the land status change and planning and design stages of new developments.

d. **Biodiversity:** The development of land through construction or extraction of construction materials, including marine dredged aggregates such as gravel or sand has a substantial impact on biodiversity in terms of both the quantity and quality of habitats and species affected. This issue is often not taken into account at the design and planning stages of new developments or during land status change resulting in unnecessary damage to biodiversity.

e. **Waste and fly-tipping or illegal dumping:** The construction sector is one of the largest natural resource consumers and global contributors of waste. A study of 27 EU member countries, for example, found that construction activities account for around 37% of the total amount of waste generated in those countries, and when combined with mining and quarrying, accounts for 66% of the total. In contrast, household waste accounts for less than 10% of the waste generated. Accordingly, successful resource management and waste reduction processes are critical during the whole life cycle, but especially during the Development Phase. Another important aspect is illegal dumping, also known as fly-tipping, which is the depositing of waste materials onto private or public land not licensed to accept that waste.

Minimising instances of such illegal dumping should be the responsibility of those that produce the waste as well as of the landowners of sites where the waste is dumped. Illegal dumping not only results in harm to the environment and to public health, but also in damage to the companies engaging in illegal dumping through the risk of substantial fines and, in some countries, the imprisonment of those involved.

8.1.5 Quality of planning, design and construction

Relevant for implementing SDGs:

The following issues are crucial with regard to *quality of planning, design and construction* in the Development Phase:

a. **Construction materials:** The use of cheaper (and often poor quality) construction materials can have far-reaching consequences in terms of the life expectancy of the building, the building's overall health and safety levels and its recyclability at the end of its life.

b. **Safety testing reports:** Falsification of safety testing reports may go hand in hand with the use of poor quality construction materials with the same ramifications. Typically, falsification concerns tests of concrete strength and geotechnical/soils data, indicating whether the soil upon which the building will be built is sufficiently strong to take the load of the structure.

c. **Building codes:** The issue behind inadequate building practices is not necessarily the lack of building codes, but their being out of date and/or not being enforced. Regulatory approval systems often lack clear processes for ensuring compliance with building standards at key points in the development process, such as foundation excavation and practical completion of projects. In addition, mechanisms requiring a formal 'hand over' process upon completion rarely exist. Many constructors walk away from a project once completed without ensuring that the building functions as intended or without performance guarantees. While the design solution may have been certified, the performance during occupation (the Real Estate Use Phase) may not have been. Verification is critical at this stage as promised design outcomes are often under-delivered.

d. Adaptation to climate change and resilience: The location, design and positioning of a building and building systems heavily impact the building's ability to adapt to the effects of climate change, such as heat waves, urban heat islands, severe storm events, heavy downpours, drought, reduced water resources, sea level rise, etc. which may render the building unstable and uncomfortable from a user perspective.

e. Refurbishment and recycling capability: Where whole life cycle thinking is not standard practice, the quality of design and construction can potentially have serious repercussions on the ability to refurbish and/or recycle the building or parts thereof during site evaluation within the Recovery Phase.

f. Accreditation standards and their respective enforcement: A lack of appropriate accreditation allows that those who commit malpractice or pursue grant approvals which exceed their professional competency continue to practice. Many jurisdictions do not have adequate accreditation standards. Additionally, many countries face a shortage of practising building inspectors, and building inspectors that work with local authorities may have little practical site experience, may be employed in roles unsuitable for their qualifications or may lack opportunities for obtaining ongoing continuing professional development.

8.2 Real Estate Use Phase

8.2.1 Transparency and disclosure

Relevant for implementing SDGs:

The following issues are crucial with regard to *transparency and disclosure* in the Real Estate Use Phase:

a. Money laundering: Real estate is a particularly attractive target for criminals seeking to disguise or hide the proceeds of crime as significant amounts of money can be moved at one time. Any lack of transparency within a market leaves room for corrupt practices, such as money laundering, which according to Transparency International's definition is: *"The process of concealing the origin, ownership or destination of illegally or dishonestly obtained money by hiding it within legitimate*

economic activities".[76] While it is difficult to exactly assess the scale of money laundering globally, figures published by the United Nations Office for Drugs and Crime (UNODC) point to somewhere between US$800bn and US$2 trillion on an annual basis[77].

Money laundering can take place through a number of transactions, using multiple accounts (often in overseas locations) making them difficult to trace. According to Transparency International, traceability issues are further exacerbated by the use of third parties and nominee agents who act on behalf of the perpetrator without disclosing ownership.[78] Among these can be *"banks, company and trust service providers, estate agents, property lawyers, dealers in high value goods and accountants".*[79] In this way, illegal funds remain hidden and are integrated into legal business and into the legal economy.

In real estate, money can be laundered on a large scale through the acquisition or fake rental of a real estate asset with the proceeds of crime, such as drug-dealing, prostitution or human trafficking but it also occurs on a much smaller scale, where real estate is sold/purchased based on omissions, falsified real estate values and disclosures (including tax evasion or mortgage fraud).

According to Transparency International, money laundering can result in the following:

– artificially rising real estate prices in a particular market;

– reduced availability of overall housing stock;

– a shift from affordable housing and refurbishment to luxury real estate developments which are a prime target within the context of money laundering; and

– the creation of 'ghost communities' with an unusually high number of empty houses, which in turn can lead to a decrease in local taxes, affecting local businesses and overall community life.[80]

Companies who violate anti-money laundering laws will face criminal and penal consequences.

b. Ineffective business decision-making: Real estate markets with a lack of accessible information, inadequate in-house data management, or misreported data can experience inefficient business decision-making at all levels, resulting in a loss of revenue and mistrust from internal and external stakeholders.

c. Undermining of investor confidence: Poor real estate transparency hinders investment. A building (or its use) that is not well-documented may be perceived as a potential investment risk which ultimately could mean that it becomes unmarketable.

8.2.2 Environmental stewardship

Relevant for implementing SDGs:

The following issues are crucial with regard to *environmental stewardship* in the Real Estate Use Phase:

a. **Energy consumption and carbon emissions:** While legislation and voluntary initiatives are reducing the in-use energy consumption share, to date, around 80% of all energy consumption occurs in the Real Estate Use Phase.[81] Buildings in operation typically use two forms of energy: electricity and heat, mainly from burning fossil fuels, such as oil, natural gas and coal. The use of fossil fuels leads to the release of significant amounts of Green House Gas (GHG) emissions, mainly carbon dioxide (CO_2). This happens both at the building level itself but also at the power plant where the primary energy is generated. The release of GHG emissions into the earth's atmosphere is the principal cause of global climate change.

The 2014 IPCC 5th Assessment Report[82] states that in 2010, buildings accounted for 32% of total global final energy use and 19% of energy-related GHG emissions (including electricity) and approximately one third of black carbon emissions. The IPCC report also provides evidence that buildings contribute between an eighth and a third of Fluorinated GHG. According to the report, this energy use and the related emissions may double, or potentially triple, by 2050, making the carbon footprint of the operational phase of buildings even more significant.

The energy needed to heat, cool and generally operate the world's buildings during the Real Estate Use Phase also poses direct social risks, for example, to population health through air pollution caused by the burning of fossil fuels. In addition, new techniques for fossil fuel extraction such as hydraulic fracturing not only impact water use and water disposal but also the stability of buildings and structures in neighbouring communities.

Excessive energy dependence on non-renewable energy sources may also contribute to socio-political conflicts.

b. **Water management:** The UN Global Compact CEO Water Mandate initiative highlights that lack of access to affordable water may become a greater threat to business than the loss of any other natural resource, including fossil fuels.[83] While there are various alternatives to fossil fuels, there are no substitutes for water.

Commercial buildings use a large proportion of municipally supplied water during their operational phase. According to the US Environmental Protection Agency (EPA), commercial and institutional users account for approximately 17% of publicly supplied water use in the US. According to the same source, offices account for up to 9% of the total water use in commercial and institutional facilities.[84]

According to Australian government figures, a moderate sized office building of 10,000m² typically consumes over 20,000 litres per day or more than 7 million litres per year – enough to supply 40 average homes.[85] The three largest uses of water in office buildings are: bathrooms and toilets, heating and cooling installations and irrigation of landscaping. Excessive consumption can potentially deprive nearby communities of much needed drinking water, leading to dehydration, diarrheal diseases, pollution and failed crops.

Given the complexity of a building in operation, water supply is often inextricably coupled with energy consumption. It is therefore not only the daily use of potable and other water by the building occupants that is the problem but also the energy needed to procure, pump, treat, transport and store this water. In addition, energy is also needed to treat waste water from buildings in the form of raw sewage, often through the use of potentially toxic chemicals.

The issue of water management is particularly pressing in the developing world and in emerging markets as in these regions populations generally have limited access to water.

c. **Waste management:** In the commercial building context, waste can be described as unused materials and products from maintenance and building management processes as well as materials and products discarded as part of day-to-day business activities.

During the use/operational phase of a commercial building, waste occurs in the following categories:

– structural materials and systems (such as partitioning walls, electricity and heating, ventilating and air conditioning (HVAC) installations and cables)

– fit-out fixtures and fittings such as worn carpets

– office furniture

– general maintenance and regular cleaning products, such as paint and detergents

– office supplies such as stationary and electronic waste

– food (especially in the hospitality business, such as restaurants, hotels, fast food outlets, etc.)

– healthcare products from buildings that are occupied by hospitals, doctor's surgeries, pharmacies, laboratories and research centres, etc.

One particularly waste-intensive aspect of building operation is the 'fit-out churn' and maintenance which may be needed when tenants leave. After departure of a tenant, rented premises are generally no longer in a 'new' condition and therefore the landlord may decide to carry out redecoration and minor interior refurbishment works to bring the premises to a condition that will attract prospective tenants. These works are often undone by the new tenant who carries out another set of redecoration and refurbishment works and service adjustments to suit his/her own requirements. The amount of potential waste caused between one tenant terminating and another starting occupancy is therefore significant.

According to an OECD definition[86], characteristic waste management activities include:

– the collection, transport, treatment and disposal of waste

– the control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste

– the prevention of waste production through in-process modifications, reuse and recycling

Ineffective waste management during the Real Estate Use Phase can adversely affect population and worker health and safety through:

– a rise in respiratory diseases caused by toxic air pollution from waste incineration emissions and waste dumping

– contamination of soil and water supplies through illegal dumping of hazardous substances contained in cleaning and maintenance products

– defacement of settlements, especially in developing countries, through the accumulation of waste

8.2.3 Treatment of tenants and communities

Relevant for implementing SDGs:

The following issues are crucial with regard to *treatment of tenants and communities* in the Real Estate Use Phase:

a. Isolation and feelings of lack of inclusion and belonging: Individuals within the community may feel that they cannot enjoy their local social spaces leading to a sense of alienation and a lack of trust and involvement in their local community.

b. Gentrification: The transformation of formerly poorer areas into business districts or redevelopment into high-value residential areas may threaten local residents and the availability of affordable housing, office or retail in the area.

c. Discriminating access to and lease of buildings: Members of societies are being denied access to either enter or rent buildings on grounds of ethnicity, age, gender, religion or sexual orientation and social status.

d. Security issues: A failure to successfully interact with local communities can lead to area deprivation and criminal damage to property through burglary, tensions and discord among community members and general vandalism. Unoccupied, unused or dilapidated buildings or spaces may encourage the influx of squatters which may lead to negative health, safety and community impacts. This in turn may discourage local urban regeneration, potentially triggering a downward spiral of an area which will reduce its attractiveness to prospective tenants and buyers.

8.2.4 Health, safety and well-being of building occupants

Relevant for implementing SDGs:

The following issues are crucial with regard to *health, safety and well-being of building occupants* in the Real Estate Use Phase:

a. Access for people with disabilities: in many buildings there are potential barriers to people with limited mobility, such as steps and stairs, preventing them to live independently and participate fully in all aspects of life.

b. Access to water, sanitation and hygiene: Building occupants do not always have access to adequate water, sanitation and hygiene facilities. The requirements of female occupants in particular are often overlooked.

c. Indoor air quality: Over recent decades, the outdoor air quality in most industrialised countries has greatly improved. At the same time, indoor air quality in buildings has declined due to energy conservation measures (e.g. air tightness of building shells), or inadequate ventilation

and the use of products and materials causing indoor pollution (e.g. solvents in glues, paint and cleaning products or biological contaminants, such as mould caused by damp).

8.2.5 Decent work and human rights within the value chain

Relevant for implementing SDGs:
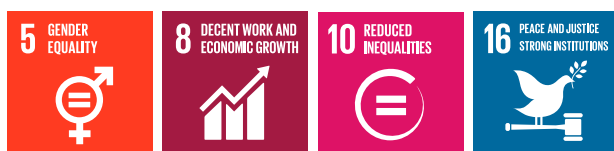
The following issues are crucial with regard to *decent work and human rights within the value chain* in the Real Estate Use Phase:

a. **Supply chain**: As with the Development Phase, one of the greatest challenges lies within the supply chain and in subcontracting. For example, a retailer may have a sub-contracted workforce, such as cleaners and general maintenance workers at the administrative head office and also at its retail outlets. Provisions in contractual arrangements with the contractors employing temporary workers can be good safeguards to ensure that national laws and regulations are respected (including payment of minimum wages) and respect of workers' rights.

b. **Forced labour:** According to the International Labour Organisation, 20.9 million people are victims of forced labour at any point in time. Of these, 90% exploited by private individuals and enterprises, while 10% are forced to work by the state, by rebel military groups or in prisons under conditions which violate fundamental ILO standards.

   More detailed information on forced labour can be found in the Development Phase Issue Glossary section 8.1.3.

c. **Minimum working age and child labour:** The legal minimum age varies from country to country but more often than not children and young people are assigned tasks that are not suitable for their age group, e.g. carrying heavy loads, handling hazardous substances or are involved in activities that may damage their psychological health.

   More detailed information on child labour can be found in section 8.1.3.

d. **Working hours:** Excessive hours of work and inadequate periods of rest and recuperation can damage workers' health and increase the risk of work accidents. In many parts of the world, there is a significant link between low wages and excessive working time. Long working hours prevent workers from getting adequate rest, attending to family

responsibilities and participating in the community. ILO standards on working time provide the framework for regulating hours of work, daily and weekly rest periods, and annual holidays. Most countries have statutory limits of weekly working hours of 48 hours or less, and the hours actually worked per week in most countries are less than the 48-hour standard established in ILO conventions. These limits serve to promote higher productivity while safeguarding workers' physical and mental health. Working time policies, enabling both men and women to reconcile work and family responsibilities, contribute significantly to achieving gender equality at work. New forms of working time such as compressed workweeks, staggered working time arrangements, annualised working hours, flexitime and on-call work, offer new opportunities and challenges.

e. **Diversity and non-discrimination:** Over the past few decades, globalisation, immigration, demographic change and mobility have diversified the workforce. The workplace is a strategic entry point for freeing society from discrimination. Combating discrimination at the workplace can help reduce disadvantages resulting from inequity that people may have suffered at earlier stages in life. Effective avenues are needed to permit meaningful challenges to discrimination when it occurs. ILO principles fix minimum thresholds. National laws and practices may well be broader and include more comprehensive approaches for the elimination of discrimination at work.[87]

8.3 Recovery Phase

8.3.1 Strategic site-use reevaluation

Relevant for implementing SDGs:

The following issues are crucial with regard to *strategic site-use reevaluation* in the Recovery Phase:

a. **Potential displacement of residents and communities:** In cases where buildings are demolished to make way for more lucrative developments, the social impact, i.e. the potential displacement of residents and vulnerable members of communities caused by change or end of use, and potentially associated issues of gentrification and affordability are often not taken into consideration. That means that social needs are not addressed and certain groups are marginalised, potentially resulting in social unrest.

b. Corrupt practices: As with the Development Phase, a lack of transparency and information-sharing with regard to land-use decision-making will reopen the opportunity for bribery and corruption, which may include government officials seeking illegal commissions. This behaviour will encourage inferior land-use planning, providing the opportunity for environmental crimes to be committed for example through the misuse of natural resources and also encourage fraudulent issuing of planning and building certificates. It also can discourage potential local and foreign investors, thereby adversely affecting investment in the real estate market.

c. Consideration of heritage sites: A potential redevelopment of older type buildings that may no longer meet current and future users' functionality expectations always brings the inherent risks of losing parts of the heritage tied to historical buildings and architecture.

8.3.2 Refurbishment and retrofitting

Relevant for implementing SDGs:

The following issues are crucial with regard to *refurbishment and retrofitting* in the Recovery Phase:

a. Complexity: Starting a construction project from scratch is often much easier than having to work around an existing structure that may or may have not already gone through various previous refurbishment cycles which may not have been carried out to a high standard or be very well documented. Once the refurbishment process has started, hidden surprises may surface that may turn what originally had been planned as a minor refurbishment into a major one. In addition, there may be problems of fitting new to old. For example, the adverse impact of thermal bridges may increase when internal insulation is applied without giving proper consideration to air flows within the building. High rise buildings are the most difficult to evaluate for retrofitting, requiring a trade-off to be made between difficulties of retrofitting at height versus the higher costs of demolition for tall structures.

b. Skills and capacity: Apart from major refurbishment projects that are typically undertaken by larger construction companies often with substantial in-house know-how of sustainability features, most refurbishments tend to be small-scale and involve non-professional and private small scale contracting.

Smaller refurbishment projects are usually in the hands of SMEs who may have highly specialised technical skills but often lack the capacity and skills when it comes to other important areas such as resource efficient construction and materials.

c. Informal labour and safety: Small scale refurbishment, particularly in the residential and smaller office market segment, is often carried out by informal labour without any protection for the client as far as records or guarantees are concerned and no social protection for the workers. A lack of public scrutiny and supervision may mean that health and safety regulations both with regard to work processes as well as to the use of potentially lower quality or even toxic materials are not applied.

d. Continuation of business operations/use: Unless the building is vacant, refurbishment will inevitably lead to a degree of disruption for whoever is currently using the building and there may be logistical challenges to ensure continuous business operations. Building occupants may need to be temporarily moved within or off the premises.

8.3.3 Waste management, resource conservation and recycling during demolition

Relevant for implementing SDGs:

The following issues are crucial with regard to *waste management, resource conservation and recycling during demolition* in the Recovery Phase:

a. Hazardous waste: Particular concern regards the proper handling and disposal of such toxic elements as lead, asbestos or radioactive materials. Occurrences of spills and dumping of toxic waste, such as hydrocarbons will result in soil contamination. This type of waste is sometimes stored or disposed of on indigenous peoples' lands or territories. This is especially true with poorly managed demolition related to informal construction areas.

b. Reuse and recycling: Reuse and recycling represent a possible and often the more preferable method of waste management. However, one major challenge is that recycling has limitations and towards the end of a recyclable's lifetime, the waste material may be of

a poor quality and incapable of being re-treated. Even under optimal conditions, recycling may not always favourable and may be inefficient.

c. **Waste water:** Demolition waste also invariably includes handling on-site waste water, which, if not handled with care, e.g. through the use of filters, temporary storage and cut-off drains, could potentially affect the ground water table and natural watercourses and, in turn, nearby communities' water sources.

d. **Health and safety:** Occupational health and safety, including the use of appropriate protective personal equipment, is often ignored during demolition and can result in serious or fatal accidents. A serious health risk exists if asbestos forms part of the demolition waste. Asbestos is a naturally occurring fibrous material which was widely used as an insulation and fire proofing solution in buildings from the 1950s until the late 1990s. It is still found today in many buildings, including homes, schools and hospitals. When materials that contain asbestos are disturbed or damaged, such as during a building's demolition, asbestos fibres are released into the air. When these fibres are inhaled they can cause serious diseases such as lung cancer.

8.3.4 Brownfield regeneration

Relevant for implementing SDGs:

The following issues are crucial with regard to *brownfield regeneration* in the Recovery Phase:

a. **Soil contamination and public health issues:** Brownfield sites are often contaminated by ground contaminants resulting either from earlier use or general dilapidation following the end of the original use of the site. Typical contaminants found on contaminated brownfield land may include solvents, pesticides, asbestos, lead or other heavy metals and biological contamination, such as raw sewage or polluted ponds representing serious public health issues, especially if the site is not adequately cordoned off. To ensure that these issues are correctly accounted for, laboratory testing of sample soils will generally be required.

b. **Forced and child labour:** Informal labour commonly arises in reclamation work. Frequently, this involves the use of forced labour, including migrant workers and child labour, often accommodated in poor conditions in labour camps. This can lead to reputational damage, legal penalties and public funding sanctions for the land owner.

More detailed information on forced labour and child labour can be found in the Development Phase Issue Glossary section 8.1.3.

c. **Health and safety:** During brownfield regeneration the same health and safety issues may occur as during demolition (see section 8.3.3).

8.3.5 Land recovery and rehabilitation of site

Relevant for implementing SDGs:

The following issues are crucial with regard to *land recovery and rehabilitation of site* in the Recovery Phase:

a. **Compulsory acquisition:** According to the FAO, *"compulsory acquisition is the power of government to acquire private rights in land without the willing consent of its owner or occupant in order to benefit society. This power is often necessary for social and economic development and the protection of the natural environment. […] Compulsory acquisition requires finding the balance between the public need for land on the one hand, and the provision of land tenure security and the protection of private property rights on the other hand. […] Compulsory acquisition is inherently disruptive. Even when compensation is generous and procedures are generally fair and efficient, the displacement of people from established homes, businesses and communities will still entail significant human costs. Where the process is designed or implemented poorly, the economic, social and political costs may be enormous."*[88]

b. Invasive/introduced species: The presence of so-called invasive or introduced species can present a challenge when rehabilitating formerly developed land into native bio-habitat. As societies move plants to new locations for cultivation as crops or ornamentals in gardens and landscaping, some of these may become invasive species that can potentially damage native plant communities and wider biodiversity. Apart from ecological damage, invasive species can also damage agriculture, infrastructure, cultural assets and even human health. Introduced species tend to outcompete native species for resources such as nutrients, light, space and water making them often difficult to eradicate from a site especially if the site had been unused or abandoned for some time as this will have allowed the invasive species to proliferate in an uncontrolled manner.

c. Soil contamination and public health issues: see section 8.3.4

d. Health and safety: see section 8.3.3

9.0 UN resources and tools list

Addressing the Retention of Identity Documents
https://www.unglobalcompact.org/resources/781

A Framework for Corporate Action on Biodiversity and Ecosystem Services
https://www.unglobalcompact.org/docs/issues_doc/
Environment/BES_Framework.pdf

A guide for anti-corruption risk assessment
https://www.unglobalcompact.org/resources/411

A Guide to Traceability: A Practical Approach to Advance Sustainability in Global Supply Chains
https://www.unglobalcompact.org/resources/791

Anti-Corruption Ethics and Compliance Handbook for Business
http://www.unodc.org/documents/corruption/Publications/
2013/Anti-CorruptionEthicsComplianceHandbook.pdf

An Anti-Corruption Ethics and Compliance Programme for Business: A Practical Guide
http://www.unodc.org/documents/corruption/
Publications/2013/13-84498_Ebook.pdf

Blueprint for Business Leadership on the SDGs
https://www.unglobalcompact.org/library/5461

Business against Corruption – a Framework for Action
https://www.unglobalcompact.org/resources/162

Business Reference Guide to the UN Declaration on the Rights of Indigenous Peoples
http://www.unglobalcompact.org/docs/issues_doc/human_
rights/IndigenousPeoples/BusinessGuide.pdf

Business Reporting on the SDGs – An Analysis of the Goals and Targets
https://www.unglobalcompact.org/library/5361

Child Labour Platform
https://www.unglobalcompact.org/Issues/Labour/child_labour_
platform.html

Children's Rights and Business Principles
https://www.unglobalcompact.org/docs/issues_doc/human_
rights/CRBP/Childrens_Rights_and_Business_Principles.pdf

Collective Action in the Fight Against Corruption
https://www.unglobalcompact.org/docs/issues_doc/Anti-
Corruption/CollectiveAction2010.pdf

Combating Forced Labour: A handbook for Employers and Business
http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---
declaration/documents/publication/wcms_101171.pdf

Common Carbon Metric -Protocol for Measuring Energy Use and Reporting Greenhouse Gas Emissions from Building Operations
http://www.unep.org/sbci/pdfs/Common-Carbon-Metric-for_Pilot_
Testing_220410.pdf

Community Engagement and Investment to Advance Human Rights in Supply Chains
https://www.unglobalcompact.org/docs/issues_doc/human_
rights/Human_Rights_Working_Group/CommunityEngage_Inv_
SupplyChain.pdf

Compulsory acquisition of land and compensation
www.fao.org/3/a-i0506e.pdf

Decent work, the key to the 2030 agenda for sustainable development
http://www.ilo.org/global/topics/sdg-2030/resources/
WCMS_436923/lang--en/index.htm

Ecosystem management
http://www.unep.org/pdf/UNEP_Profile/Ecosystem_management.
pdf

Eliminating Child Labour – Guides for Employers
https://www.unglobalcompact.org/library/79

Environmental Stewardship Strategy – Overview and Resources for Corporate Leaders
https://www.unglobalcompact.org/docs/issues_doc/
Environment/Environmental_Stewardship_Strategy.pdf

Fight against Corruption: E-Learning Tool
https://www.unglobalcompact.org/resources/152

Fighting Corruption in the Supply Chain: A Guide for Customers and Suppliers
https://www.unglobalcompact.org/resources/153

From Poor Working Conditions to Forced Labour – What´s Hidden in Your Portfolio
https://www.unglobalcompact.org/library/4581

Global Alliance for Buildings and Construction
https://globalabc.org

Global Biodiversity Outlook 4
http://apps.unep.org/publications/pmtdocuments/
gbo4-en.pdf

Global Opportunity Explorer
http://www.globalopportunityexplorer.org/

Good Practice Note on Free Prior and Informed Consent
http://www.unglobalcompact.org/docs/issues_doc/human_
rights/Human_Rights_Working_Group/FPIC_Indigenous_
Peoples_GPN.pdf

Greening the Supply Chain
http://www.unep.org/sbci/pdfs/greening_the_supply_chain_
report.pdf

Guidance for Companies on Respecting the Human Rights to Water and Sanitation
http://pacinst.org/wp-content/uploads/2015/01/Guidance-on-
Business-Respect-for-the-HRWS.pdf

Harmful substances and hazardous waste
http://www.unep.org/pdf/brochures/HarmfulSubstances.pdf

IFC Excellence in Design for greater Efficiencies: Build Green
https://www.edgebuildings.com/

IFC Green Buildings Green Building Opportunities per Sector
http://www.ifc.org/wps/wcm/connect/4c0b16004aab9e9
d9672d69e0dc67fc6/Green+Buildings+-+Opportunities+
per+Sector.pdf?MOD=AJPERES

ILO Codes of Practices
http://www.ilo.org/safework/info/standards-and-instruments/codes/lang--en/index.htm

ILO Convention 169
http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_100897.pdf

ILO Convention concerning Hygiene in Commerce and Offices
http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312265

ILO Convention concerning Safety and Health in Construction, (No. 167)
http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C167

ILO Declaration on Fundamental Principles and Rights at Work
http://www.ilo.org/declaration/lang--en/index.htm

ILO Evaluation Programme – Construction Action Programme
http://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_162809.pdf

ILO Helpdesk for Business on International Labour Standards
https://www.unglobalcompact.org/resources/75 and www.ilo.org/business

ILO Report on Health and Life at Work: A basic ` human right
http://www.ilo.org/public/portugue/region/eurpro/lisbon/pdf/28abril_09_en.pdf

ILO Recommendation concerning Hygiene in Commerce and Offices
http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312458:NO

ILO Training package in occupational safety and health for the construction industry
http://www.ilo.org/sector/Resources/training-materials/WCMS_161706/lang--en/index.htm

ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy
www.ilo.org/mnedeclaration
E-learning module: www.ilo.org/mnelearning

Implementing the Pinheiro Principles – Handbook on Housing and Property Restitution for Refugees and Displaced Persons
http://www.ohchr.org/Documents/Publications/pinheiro_principles.pdf

Inclusive Sourcing
http://weprinciples.unglobalcompact.org/files/attachments/Inclusive_Sourcing_Flyer-_Call_to_Action_23_May,_2013.pdf

Indigenous Peoples' Rights
http://www.unglobalcompact.org/Issues/human_rights/indigenous_peoples_rights.html

International Labour Standards on Occupational Safety and Health
http://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/lang--en/index.htm

Investing in Women´s Employment – Good for Business, Good for Development
http://www.ifc.org/wps/wcm/connect/5f6e5580416bb016bfb1bf9e78015671/InvestinginWomensEmployment.pdf?MOD=AJPERES

Occupational Health in Sectors and Industries (ILO)
http://www.ilo.org/safework/industries-sectors/lang--en/index.htm

Promoting Collective Action through Global Compact Local Networks
https://www.unglobalcompact.org/Issues/transparency_anticorruption/collective_action.html

Reporting Guidance on the 10th Principle Against Corruption
https://www.unglobalcompact.org/resources/154

Rights of Indigenous Peoples – customary rights to lands, territories and resources International Finance Corporation's (IFC) Performance Standards
http://www.ifc.org/wps/wcm/connect/1154828004a0255db96fbffd1a5d13d27/PS_English_2012_Full-Document.pdf?MOD=AJPERES

Safety and health in construction. ILO Code of Practice
http://www.ilo.org/safework/info/standards-and-instruments/codes/WCMS_107826/lang--en/index.htm

SDG Compass
https://sdgcompass.org/

Secure Land Rights for all
http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2488&AspxAutoDetectCookieSupport=1

Stand Together Against Corruption: A Practical Guide to Help Prevent Corruption in the Supply Chain
https://www.unglobalcompact.org/resources/421

Supply Chain Sustainability – A Practical Guide for Continuous Improvement
https://www.unglobalcompact.org/library/205

Sustainable Development Goals (SDGs)
http://www.un.org/sustainabledevelopment/sustainable-development-goals/

Sustainable Development Goal Indicators
http://unstats.un.org/sdgs/indicators/indicators-list/

Sustainable Development Knowledge Platform, Goal 1
https://sustainabledevelopment.un.org/sdg1

Sustainable Development Knowledge Platform, Goal 2
https://sustainabledevelopment.un.org/sdg2

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ricsamericalatina@rics.org

North America
ricsamericas@rics.org

Asia Pacific

ASEAN
ricsasean@rics.org

Greater China (Hong Kong)
ricshk@rics.org

Greater China (Shanghai)
ricschina@rics.org

Japan
ricsjapan@rics.org

Oceania
oceania@rics.org

South Asia
ricsindia@rics.org

EMEA

Africa
ricsafrica@rics.org

Europe
ricseurope@rics.org

Ireland
ricsireland@rics.org

Middle East
ricsmiddleeast@rics.org

United Kingdom RICS HQ
contactrics@rics.org

rics.org