

Supplementary S1

Thanks for participating in this Semi-Structured interview, which is part of a research project to develop a set of indicators that can help provide a common understanding of sustainability in healthcare building among all stakeholders.

The following (candidate indicators) going to be used to drive measurable indicators to assess and report sustainability in healthcare building by relevant stakeholders:

Overview of the six main objectives and their associated indicators.

First objective: Greenhouse gas emissions along a building's life cycle

Intention: to minimise whole life cycle carbon emissions, considering both energy consumption during the use stage of the building and embodied energy in building materials and construction products.

Indicators:

1.1 Use stage energy performance. 1.2 Life cycle Global Warming Potential.

Second Objective: Resource-efficient and circular material life cycles

Intention: to optimise the building design to support lean and circular product and material flows, including:

1. Quantification of construction products and materials used.
2. Planning, estimation, and monitoring of circular outcomes for construction and demolition waste generated.
3. Assessment and scoring of the adaptability of building designs.
4. Assessment and scoring of the potential for deconstruction in building designs as opposed to demolition.

Indicators:

2.1 Bill of quantities, materials, and lifespans.

2.2 Construction & demolition waste and materials.

2.3 Design for adaptability and renovation.

2.4 Design for deconstruction.

Third Objectives: Efficient use of water resources

Intention: to use water efficiently, particularly in areas with identified long-term or projected water stress.

Indicator:

3.1 Use stage water consumption.

Fourth Objective: Healthy and comfortable spaces

Intention: to create building spaces that are comfortable, attractive, and productive. This includes aspects regarding the quality of the indoor environment:

1. The quality of indoor air for specific parameters and pollutants.
2. The degree of thermal comfort.
3. The quality of artificial and natural light and associated visual comfort.
4. The capacity of the building fabric to provide a comfortable acoustic environment for its occupants.

Indicators:

4.1 Indoor air quality. 4.2 Time outside of thermal comfort range. 4.3 Lighting and visual comfort. 4.4 Acoustics and protection against noise.

Fifth Objective: Adaptation and resilience to climate change

Intention: to futureproof building performance:

1. Adapt to future climate changes that will impact thermal comfort.
2. Make the building more resilient and resistant to extreme weather events (including flooding: fluvial, pluvial, and coastal).
3. Improve the building design to reduce the chances of flood events in the local and downstream area (i.e., incorporating sustainable drainage features).

Indicators:

5.1 Protection of occupier health and thermal comfort. 5.2 Increased risk of extreme weather events. 5.3 Sustainable drainage.

Sixth Objective: Optimised life cycle cost and value

Intention: to gain a long-term view of the whole-life costs and market value of more sustainable buildings, including:

1. Life cycle costs (construction, operation, maintenance, refurbishment, and disposal).
2. Encourage the integration of sustainability aspects into market value assessment and risk rating processes and ensure that this is done in as informed and transparent a way as possible.

Indicators:

6.1 Life cycle costs. 6.2 Value creation and risk exposure.

Suggested Objectives: -----

Suggested Indicators: -----

Notes: -----