IEA EBC Annex 72:
Assessing life cycle related environmental impacts caused by buildings

Final deliverables

Rolf Frischknecht
Operating Agent, Switzerland

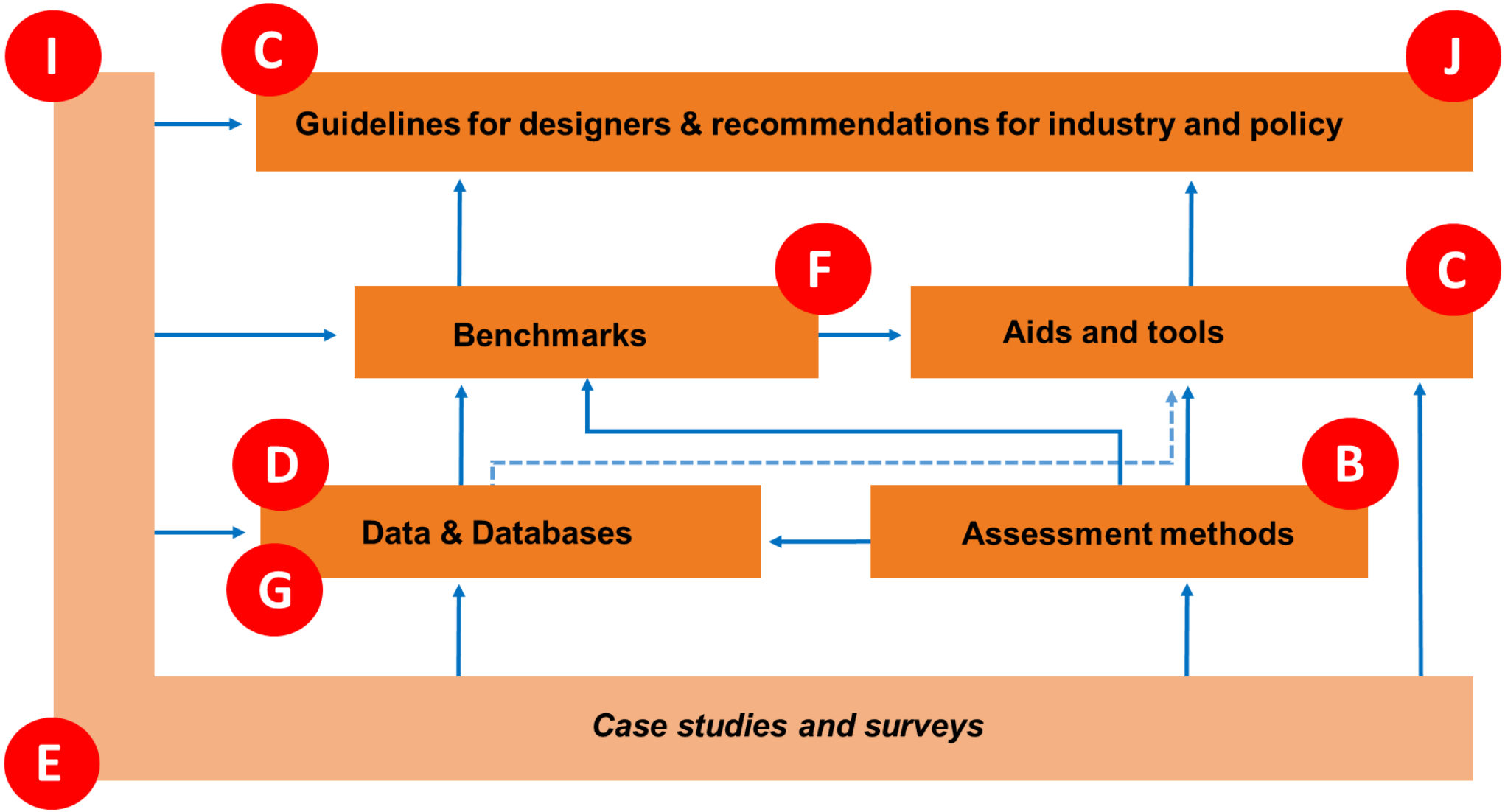
Final event:
SBE'22, Berlin, Germany, 21 September 2022

8 Official Deliverables (Reports)

ANNEX 72 EBC

Nr.	Title
B	Report on Context-specific **methods guidelines** on the environmental life cycle assessment of buildings, including biogenic carbon assessment
C	Report on **guidelines for designers** on how to optimise the life cycle performance of buildings **using design tools** such as BIM
D	Report on **national LCA databases** used in the construction sector
E	Report on **building case studies**
F	Report on **environmental benchmarks** of buildings, including zero emission buildings
G	Report on **how to establish an LCA database** targeted to the construction sector
I	**Optimisation** case studies
J	Understanding the impact of individual, industry & political **decisions** on transitions **towards environmental sustainability**
	Annex 72 Summary Report

Deliverables available **Q1 2023** on https://annex72.iea-ebc.org/



ANNEX 72 EBC

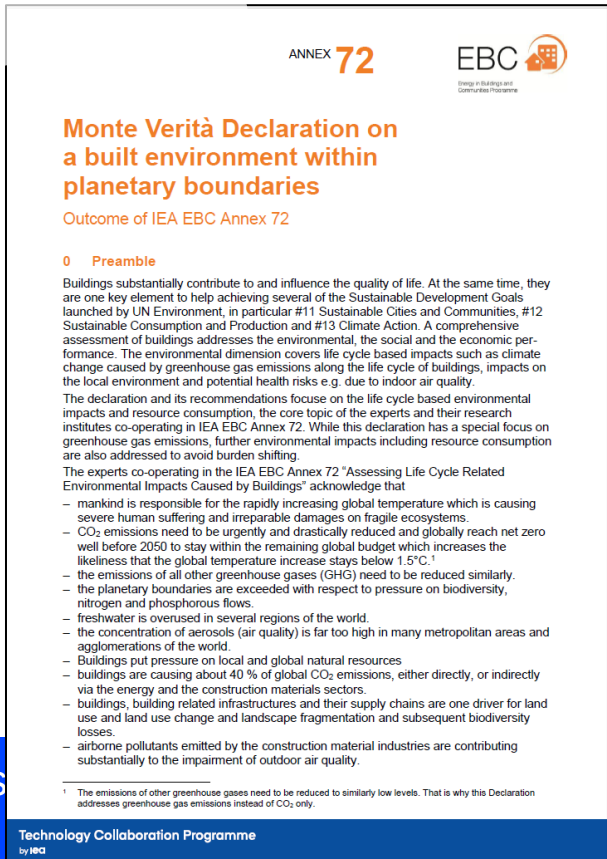
IEA EBC Annex 72:
Assessing life cycle related environmental impacts caused by buildings

Hand-over of Monte Verità Declaration
to Mr. Philippe Moselay,
Policy Officer at **European Commission**

Introduce **legally binding maximum target values** for GHG-emissions of **new constructions and of refurbishments by 2025** latest with a roadmap **to net zero by 2035.**

Rolf Frischknecht
Operating Agent, Switzerland

Final event:
SBE'22, Berlin, Germany, 21 September 2022


ANNEX 72 EBC

Monte Verità Declaration on a built environment within planetary boundaries

Outcome of IEA EBC Annex 72

0 Preamble

Buildings substantially contribute to and influence the quality of life. At the same time, they are one key element to help achieving several of the Sustainable Development Goals launched by UN Environment, in particular #11 Sustainable Cities and Communities, #12 Sustainable Consumption and Production and #13 Climate Action. A comprehensive assessment of buildings addresses the environmental, the social and the economic per-formance. The environmental dimension covers life cycle based impacts such as climate change caused by greenhouse gas emissions along the life cycle of buildings, impacts on the local environment and potential health risks e.g. due to indoor air quality.

The declaration and its recommendations focuse on the life cycle based environmental impacts and resource consumption, the core topic of the experts and their research institutes co-operating in IEA EBC Annex 72. While this declaration has a special focus on greenhouse gas emissions, further environmental impacts including resource consumption are also addressed to avoid burden shifting.

The experts co-operating in the IEA EBC Annex 72 "Assessing Life Cycle Related Environmental Impacts Caused by Buildings" acknowledge that

- mankind is responsible for the rapidly increasing global temperature which is causing severe human suffering and irreparable damages on fragile ecosystems.
- CO_2 emissions need to be urgently and drastically reduced and globally reach net zero well before 2050 to stay within the remaining global budget which increases the likeliness that the global temperature increase stays below 1.5°C.[1]
- the emissions of all other greenhouse gases (GHG) need to be reduced similarly.
- the planetary boundaries are exceeded with respect to pressure on biodiversity, nitrogen and phosphorous flows.
- freshwater is overused in several regions of the world.
- the concentration of aerosols (air quality) is far too high in many metropolitan areas and agglomerations of the world.
- Buildings put pressure on local and global natural resources
- buildings are causing about 40 % of global CO_2 emissions, either directly, or indirectly via the energy and the construction materials sectors.
- buildings, building related infrastructures and their supply chains are one driver for land use and land use change and landscape fragmentation and subsequent biodiversity losses.
- airborne pollutants emitted by the construction material industries are contributing substantially to the impairment of outdoor air quality.

[1] The emissions of other greenhouse gases need to be reduced to similarly low levels. That is why this Declaration addresses greenhouse gas emissions instead of CO_2 only.

Technology Collaboration Programme by IEA