

AAR 4817 + AAR 4546

(Greenhouse gas)

emissions

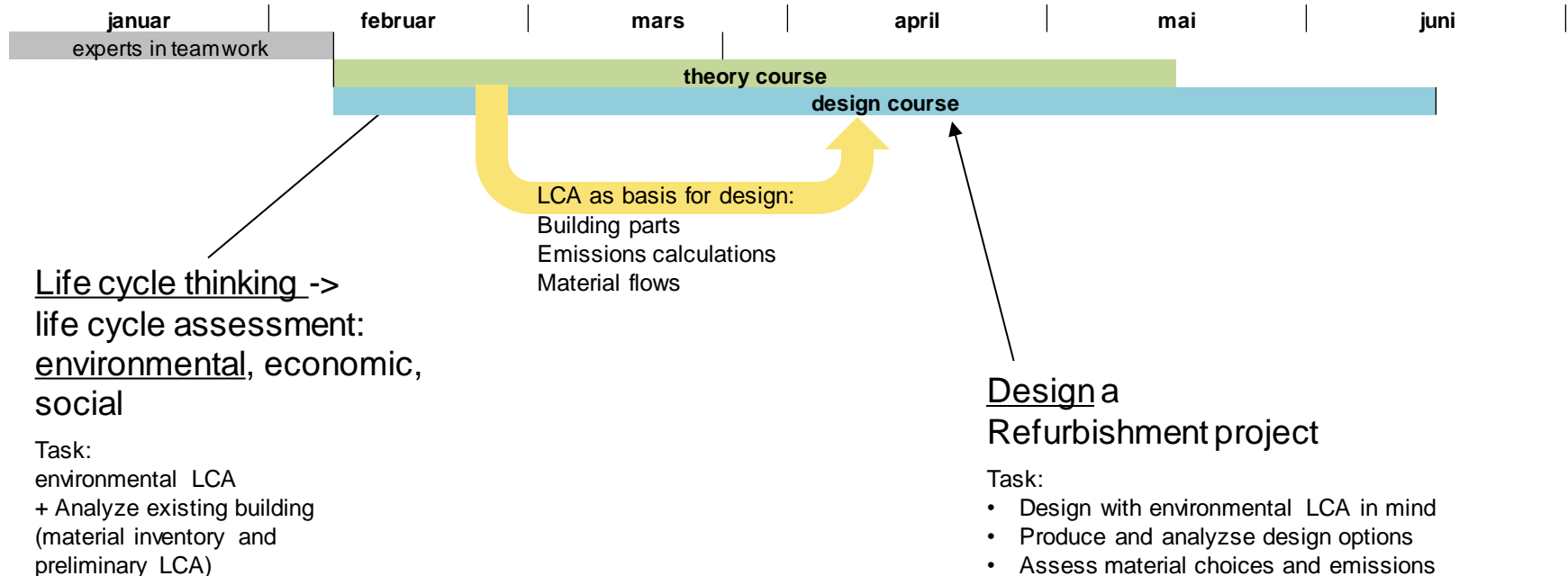
(from materials)

as design driver

17.11.2023

AAR 4546 + AAR 4817

OVERVIEW spring semester 2024



Design: LCA process

INTERVENTION PRINCIPLES

THE AMOUNT OF RECONSTRUCTED AREAS



DEMOLISHING SCHEME
less than 50% of intervention

REUSE



MATERIALS SEARCH FOR REUSE

COMPACTNESS (REDUCE AMOUNT OF EXTERIOR WALLS)



EXISTING BUILDING
build-up area - 10 522 m²
perimeter - 1 046 m



PROPOSAL
build-up area - 11 828 m²
perimeter - 866 m

NEW MATERIALS SELECTION PRINCIPLE

PRODUCT LEVEL



Priority to the wooden finishing from local materials



Details with fewer emissions



Usage of low-carbon concrete where is needed

COMPONENT LEVEL



Priority for new load-bearing structures made of wood



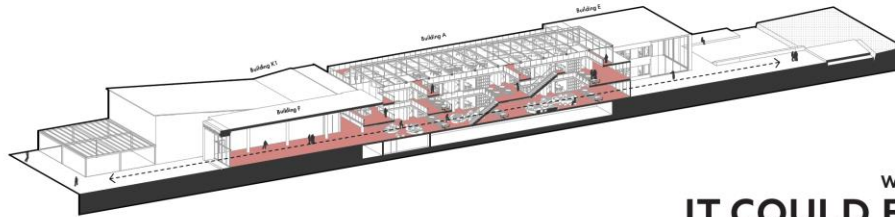
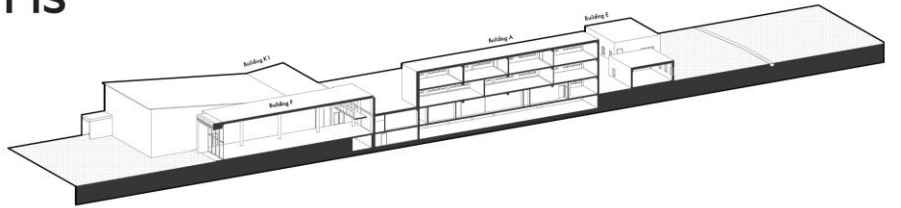
Attached load-bearing structures from low-carbon



Design choice for the atriums

Before - After

WHAT
IT IS

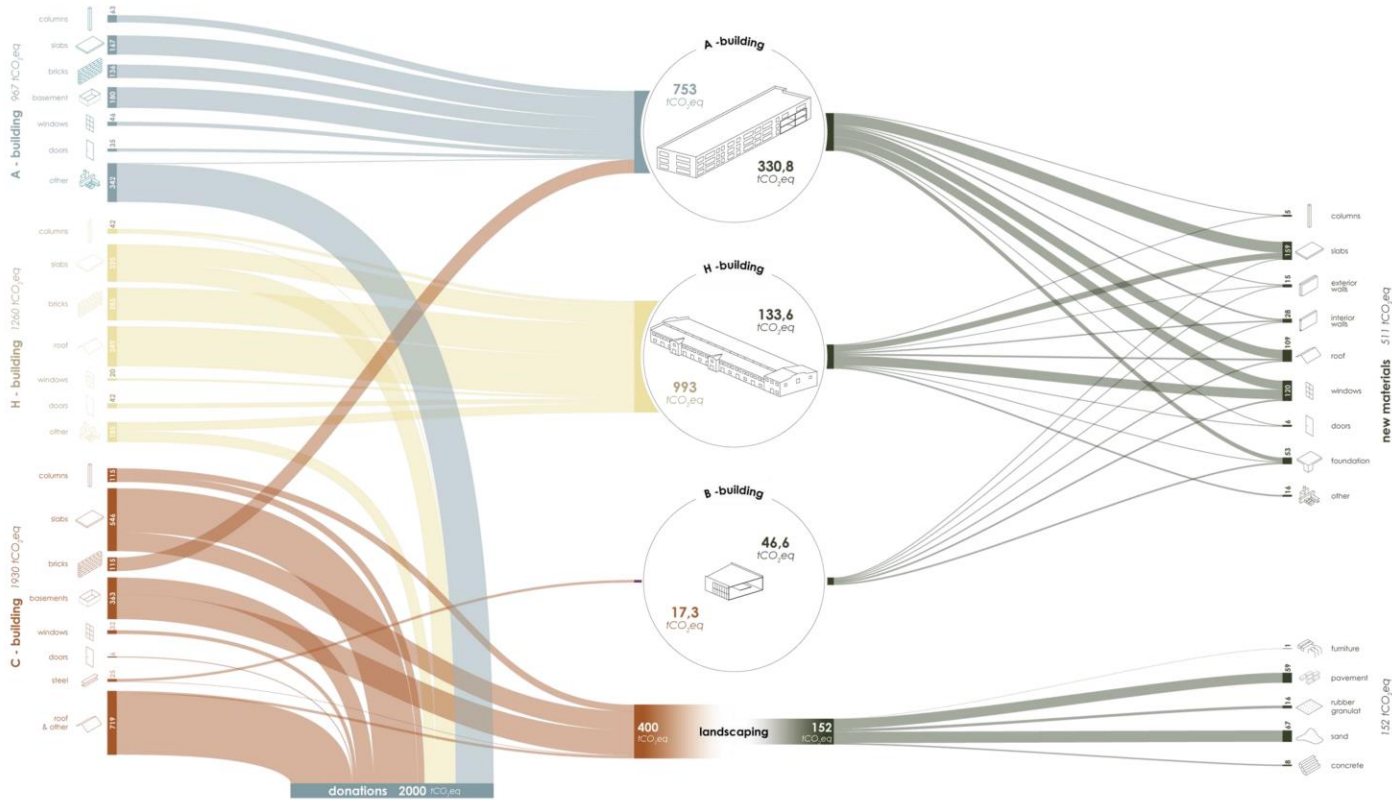


WHAT
IT COULD BE



Group 5 2022: Before – After: Camilo Andres Calderón, Fanny Laurain, Galina Voitenko, Jesus Daniel Garcia

Material flow



Emissions as Design Driver - logistics

Courses start: 5./ 6.2.2024

Groups of students:

- International
- 11 MSSUSARC students
- 8 places for MAAR students
- Exchange students
- Interdisciplinary

Teaching team:

Patricia Schneider-Marin
Anshuman Abishek Mishra
Siri Ursin
Eirik Resch (LCA)
Bunji Izumi (structure)...
and guests

Focus on the life-cycle, low-emission

Thank you

