Life Cycle Assessment with the Energy ADE

December 6th, 2017 – Lydia TRZCINSKI
Life Cycle Assessment

CONSUMPTIONS
> During lifetime
> Estimated thanks to simulations

MATERIALS
> Imbedded carbon impact
> Addition of all building elements

WORKS
> Construction / deconstruction
> Out of scope

ENVIRONMENTAL IMPACT
Life Cycle Assessment

THERMAL ZONES

CONSUMPTIONS
> During lifetime
> Estimated thanks to simulations

COMPONENTS

MATERIALS
> Imbedded carbon impact
> Addition of all building elements

WORKS
> Construction / deconstruction
> Out of scope

ENVIRONMENTAL IMPACT
ADE Energy structure: today

- CITY OBJECT
  - BUILDING
    - BLDG BOUNDARY
    - THERMAL ZONE
      - THERMAL BOUNDARY
      - COMPONENT

**PROBLEM ENCOUNTERED**
- Thermal zoning is a representation used for simulation, not the reality…
- What if the zoning changes? (need for complete remodeling of thermal boundaries and properties)

**PROBLEM ENCOUNTERED**
- What if the zoning changes?
- How to account for other material quantities?
- How to link to material / product DBs?
ADE Energy structure: CSTB internal solution

CSTB SOLUTION

- Component types = surface, layered, opening, …

- Link LCA information to any cityObject:
  - Building > overall quantities
  - Blg boundary > thermal zone redefinition
  - Thermal zone > internal and boundary Systems, etc > account for those too!

- Have a dynamic reference to an external DB of component LCA information (at material, but also product level)
In conclusion: issues / wishlist

DISSOCIATE MATERIALS/PRODUCTS FROM THERMAL ZONES

MANAGE MATERIAL/PRODUCT INFO IN REFERENCE TO AN EXTERNAL DB
Merci pour votre attention