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Lead Architect

Lightweight facades

AluForum, Moscow

21.09.2021

ILEK
University of Stuttgart



Heydar Aliyev Centre Baku



HDI Gerling Düsseldorf



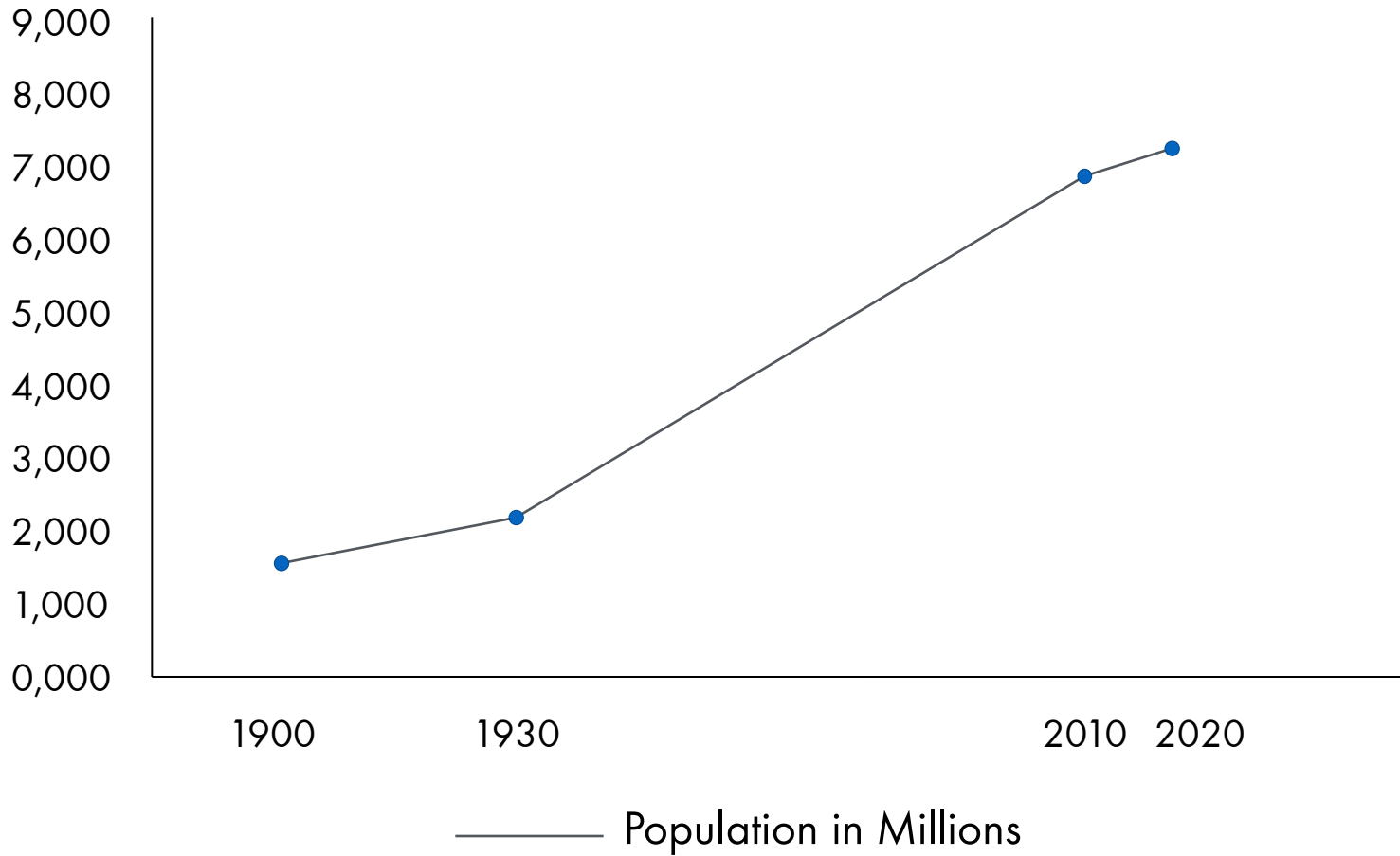
H16 Stuttgart



What is lightweight?



Olympiastadion, München 1972



According to the United Nations Department of Economic and Social Affairs

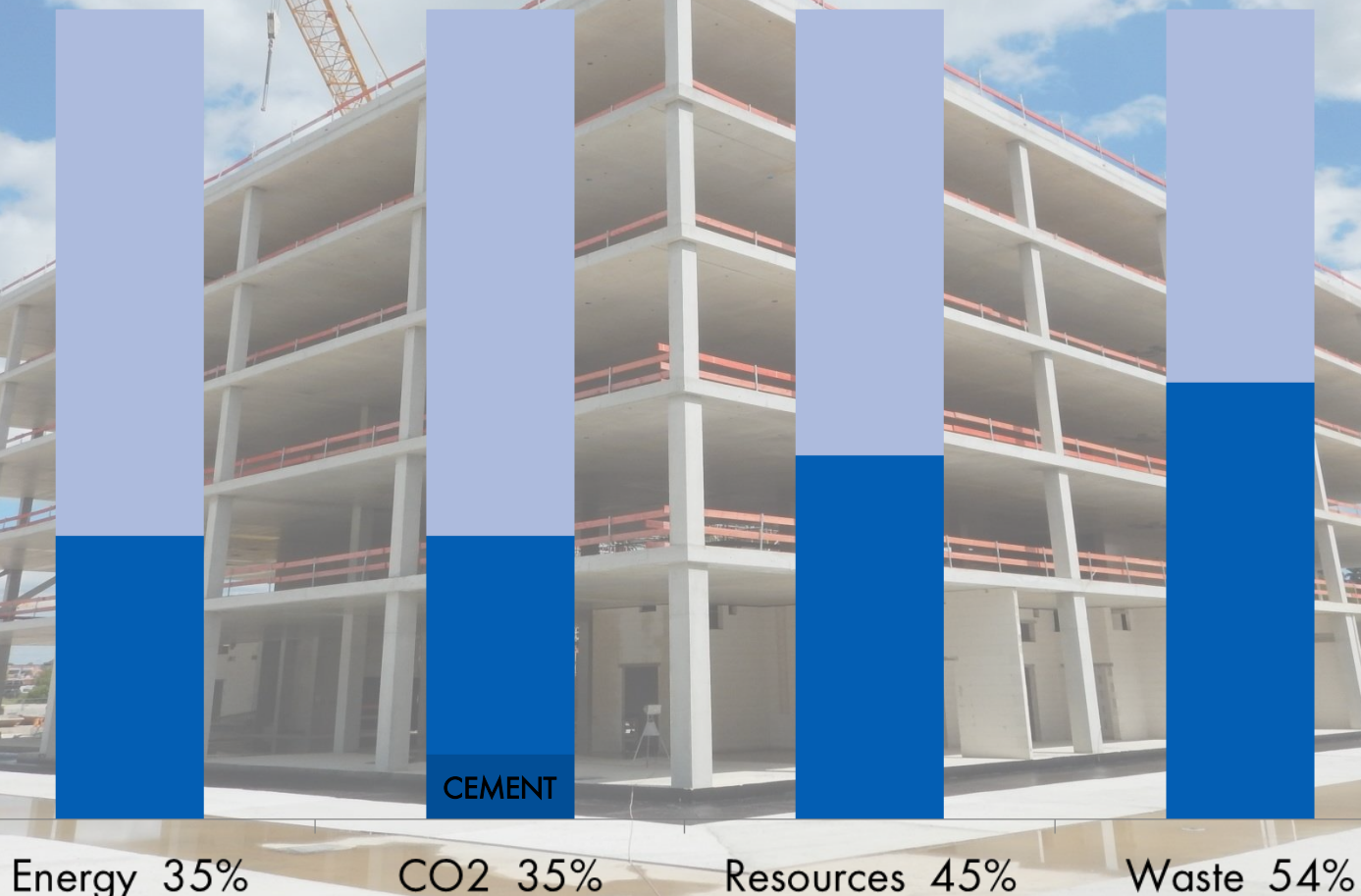






Impact of construction industry

(SOURCE: Umweltbundesamt 2018)



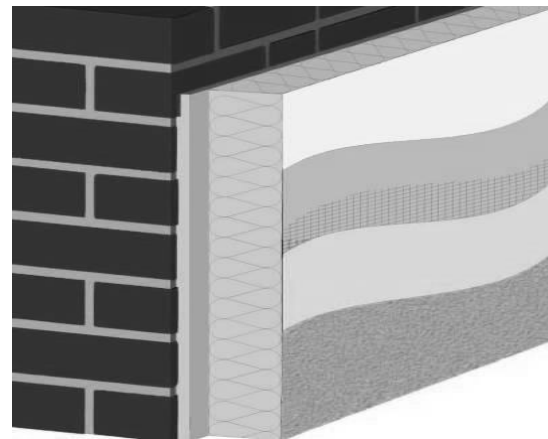
Passivhaus





15-25 different materials form the perimeter wall of a typical german residential building

- | | | | |
|-----|------------------|-----|------------------------|
| 1. | Coating | 16. | Concrete reinforcement |
| 2. | Wallpaper | 17. | Etch primer |
| 3. | Adhesive | 18. | Plaster external |
| 4. | Plaster internal | 19. | Coating |
| 5. | Brickwork | 20. | |
| 6. | Mortar | | |
| 7. | Water pipes | | |
| 8. | Insulation pipes | | |
| 9. | Electrical wires | | |
| 10. | Insulation wires | | |
| 11. | Ductwork | | |
| 12. | Adhesive | | |
| 13. | Insulation | | |
| 14. | Anchors | | |
| 15. | Mortar armour | | |



How to build more buildings with less material?

How to build more with less?

Modern lightweight facades



Bremen University/Germany

Bayer Headquarters

Leverkusen, Germany



Bayer Headquarters
Leverkusen, Germany



European Investment Bank

Luxembourg



European Investment Bank
Luxembourg



Plot15, Moscow
A+E: WSM



400,000m², ca. 300m height



Plot 15
Moscow

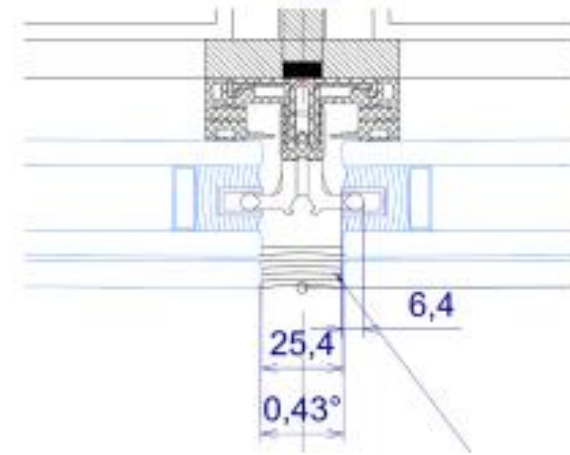
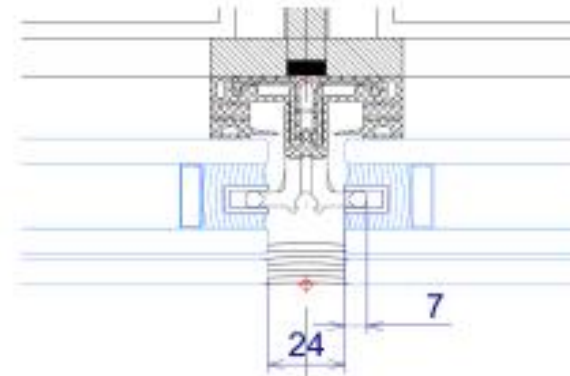
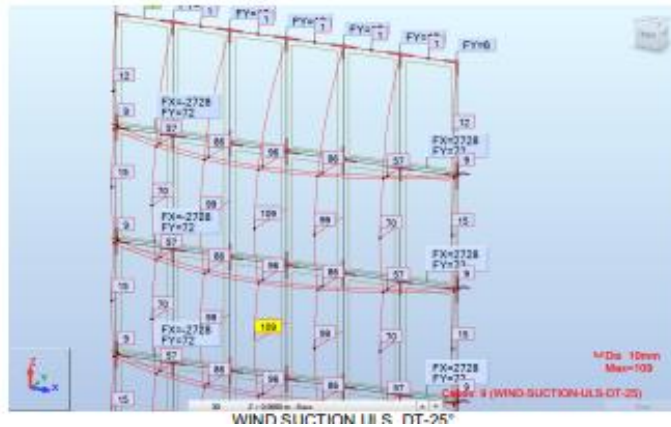


Plot15
Moscow



Plot15

Moscow



Challenges



Reduce
Emissions



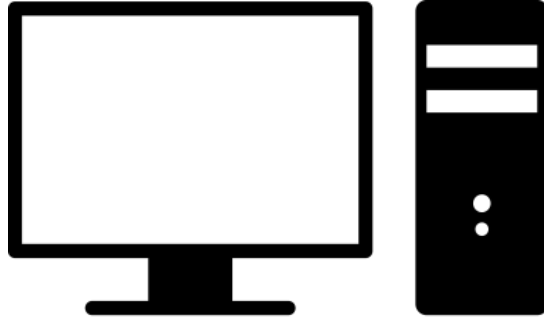
Save
Natural Resources



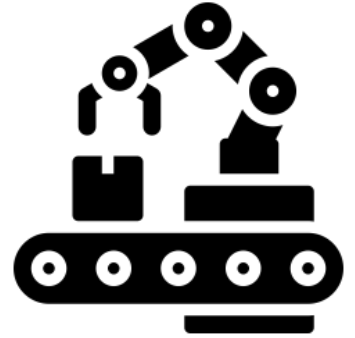
Reduce
Waste



Planning



Processing



Manufacturing