

# INCREASING HOUSING DEMAND:

ANALYSIS OF STEEL FRAME  
AS A SUSTAINABLE SOLUTION

This work is an EFL student project. The pictures in this presentation are only used for educational purpose. If there is any copyright conflict, they will be immediately removed

LAUREANO AGUIAR – Civil engineering student  
FERNANDO MICHELIN – Civil engineering student  
Universidad Tecnológica Nacional,  
Facultad Regional Paraná  
Inglés II - 2022





**11 SUSTAINABLE CITIES  
AND COMMUNITIES**



Increasing Housing  
Demand

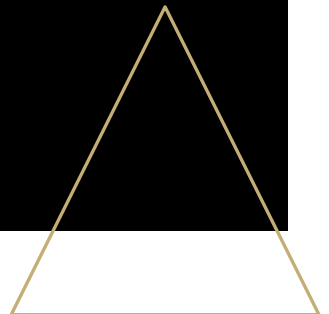
Sustainable  
Development Goal #11

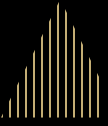
Steel Frame as a  
Solution



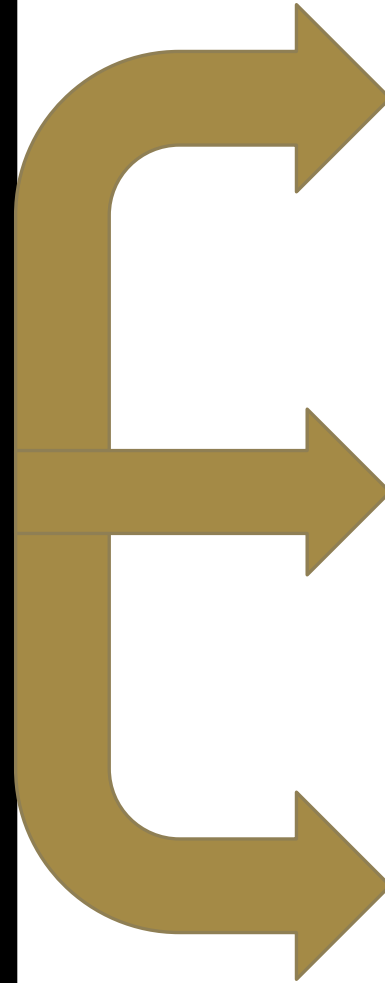
# Map of the presentation

- ❖ The growing demand for housing
- ❖ Use of steel frame as a solution
- ❖ Advantages of steel frame
- ❖ Disadvantages of steel frame





# The growing demand for housing



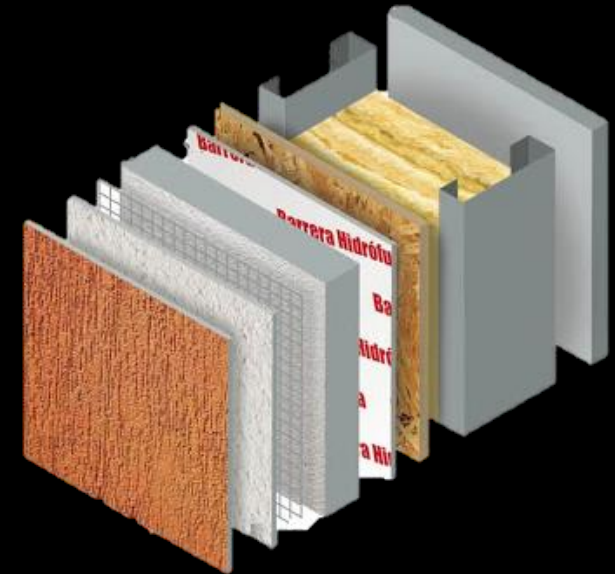
**Presentation of the problem**

**Reasons or causes**

**Sustainable solution**

# Steel frame as a solution for the growing demand for housing

- Characteristics of Steel Frame:
  - Set of structural elements
  - Dry assembly of these elements
- Description of the process:
  - Development of the project design
  - Calculation and budget of the work
  - Foundation construction
  - Dry construction



← ADVANTAGES

VS

DISADVANTAGES →

- Construction speed



- Environmental impact



- Maintenance Cost



- Conduction of Heat





# Conclusion



Good use of resources



Reduction of pollution



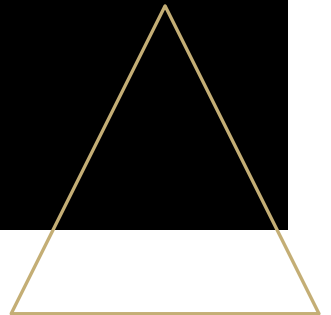
Sustainable end of life



High initial investment



Steel frame as an optimal solution to housing demands



# References

- [1] United Nations. The Sustainable Development Goals Report. New York, (NY), 2019. Accessed: May 20, 2022. [Online]. Available: <https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf>
- [2] O. Golubchikov, and A. Badyina. Sustainable housing for sustainable cities. A policy framework for developing countries. Kenya: UN-Habitat, 2012. Accessed: Aug. 8, 2022. [Online]. Available: <https://unhabitat.org/sustainable-housing-for-sustainable-cities-a-policy-framework-for-developing-cities>
- [3] W. Luecke, D.McColskey, C.McColskey, S.Banovic, R.Fields, T. Foecke, T.Siewert, and F.Gayle . “Mechanical Properties of Structural Steels”. U.S. Department of Commerce, 2005. Accessed: Aug. 21, 2022. [Online]. Available: <https://www.govinfo.gov/content/pkg/GOVPUB-C13-8620f9e60cbfd1c3ac9e0bf55ba3770c/pdf/GOVPUB-C13-8620f9e60cbfd1c3ac9e0bf55ba3770c.pdf>
- [4] Ö. Beşgül, “Design and production of steel buildings: a case study in Ankara” M.S. thesis., METU, Ankara. , 2006. [PDF document]. Available: <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.633.4880&rep=rep1&type=pdf>
- [5] B. Suresh and A. Kumar. (2000) Steel Structures Design and Drawing [PDF document]. Available: [https://www.iare.ac.in/sites/default/files/lecture\\_notes/IARE\\_SSDD\\_LN.pdf](https://www.iare.ac.in/sites/default/files/lecture_notes/IARE_SSDD_LN.pdf)
- [6] J. Widman. Sustainability\_of\_steel\_framed\_buildings. Sweden, 2005. Accessed: Aug. 18, 2022. [Online]. Available: [https://www.stalforbund.no/wp-content/uploads/2021/02/Sustainability\\_of\\_steel\\_framed\\_buildings.pdf](https://www.stalforbund.no/wp-content/uploads/2021/02/Sustainability_of_steel_framed_buildings.pdf)