

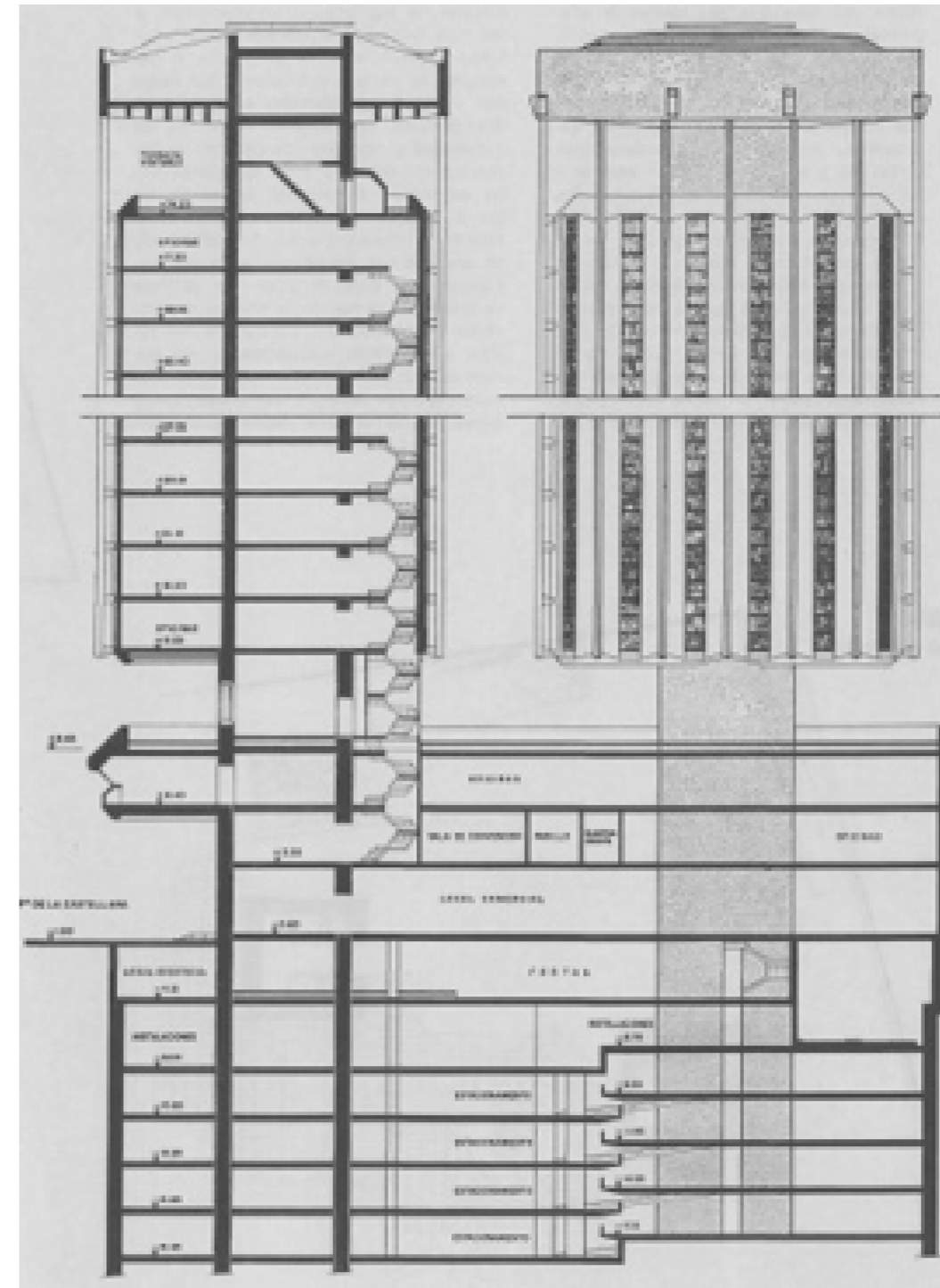
Politechnika Śląska - Silesian University of Technology (Poland)

EDIFICIOS COLGANTES / EDIFICIS PENJATS / HANGING BUILDINGS

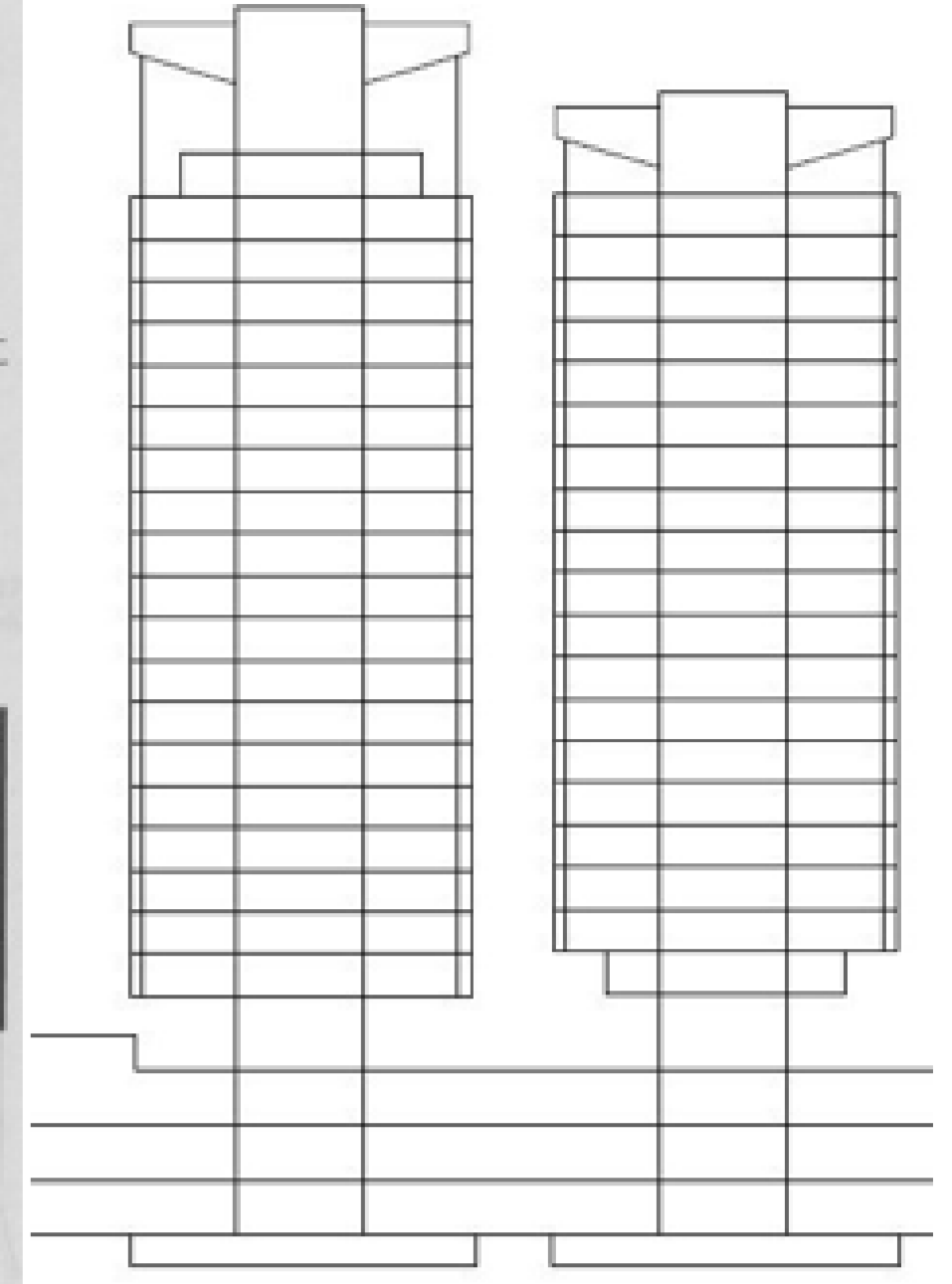
The project consists in the comparison of the execution of two singular buildings, belonging to the type of hanging buildings, in Madrid, Spain, and Katowice, Poland. One of the singularities of these buildings is the context in which the construction of these is developed, being in the decades of the 60 and the 70, with closed governing regimes, in which a strong economic development begins to take place the appearance of singular constructions to show the economic power of the companies.

Visually we can observe the similarity, both being composed by two large towers, in the building of "Torres de Colón" from Madrid, up to 116m in height, and in the case of the towers "Stalexport" 92m, with plants in the lower levels that homogenize the whole. Structurally they are based on four main elements which, in order of execution, are a foundation on which the lower plants and the central core of the towers are supported, and on the top of the core a hanging head was executed. From the exterior zone of this one leaves some tie rods of which hang the floors of the plants of the towers. The objective of this type of construction, in addition to the aesthetic function we have discussed, is also intended to provide a greater use of the plants of the towers, leaving a large Surface diaphanous in them, as well as achieving greater economic use of the lower plants because to have nothing more than the pillars of a low-rise building. All these similar elements have differences in the execution, which are the ones that we analyze now. In the first place, as regards the foundation, in the case of Madrid we have a deep foundation composed of screens and a Deep slab, while in Stalexport a large slab is made directly on the ground, this is due to the need to accommodate parking in Katowice was not a necessary condition of the project. The central cores are very similar, of reinforced concrete with gaps for their light weight, which only differs in the arrangement of these gaps. The hanging head consists of four large beams two to two perpendicular that in the case of Madrid are added perimeter beams, this is due to the number of ties that have to hold the slabs, which is smaller in Katowice, in addition differ in that in one case the braces cover two heights and in the other one, due to the execution system used in the slabs.

The development of this analysis shows us the different possibilities that exist to solve the execution of buildings, making us learn that we should not only stick to the traditional systems and that the study of needs in each particular case makes us good professionals.



Section and rear elevation of "Torres de Colón"



Scheme of the towers "Stalexport"



1. Location of Stalexport



1. Location of Torres de Colón



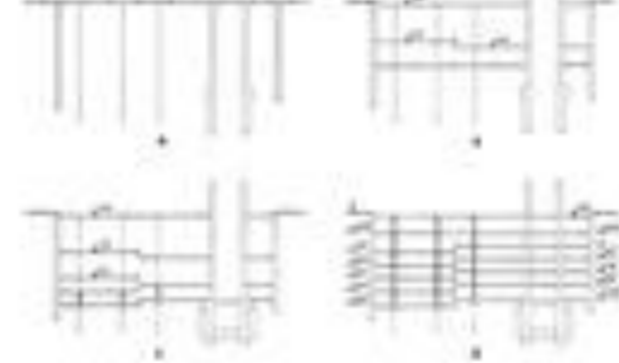
2. General plants "Stalexport"



3. Foundation of "Stalexport"



2. General plants "Torres de Colón"



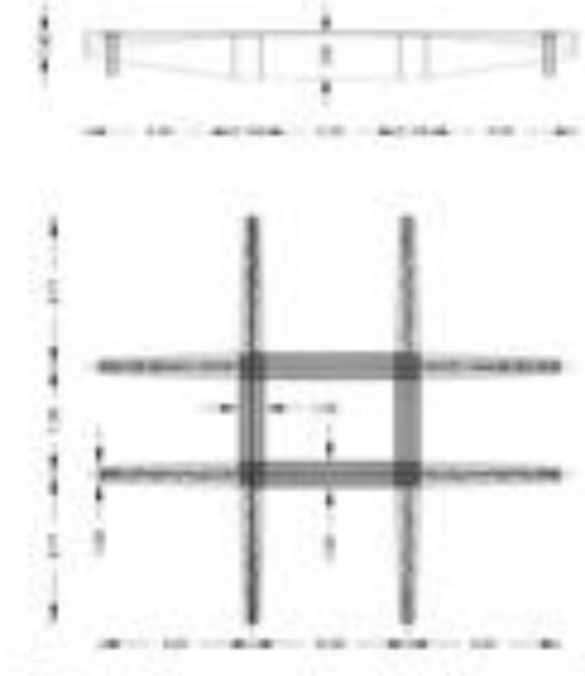
3. Foundation of "Torres de Colón"



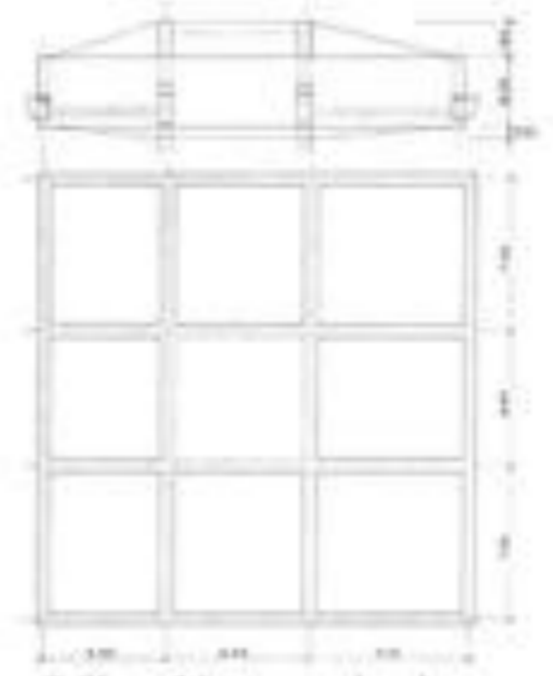
4. Execution of the central core in "Torres de Colón"



5. Lifting of the formwork by bars and climbing jacks in "Torres de Colón"



6. Plan of the towers head "Stalexport"



7. Plan of the towers head "Torres de Colón"



8. Execution of the head of the towers



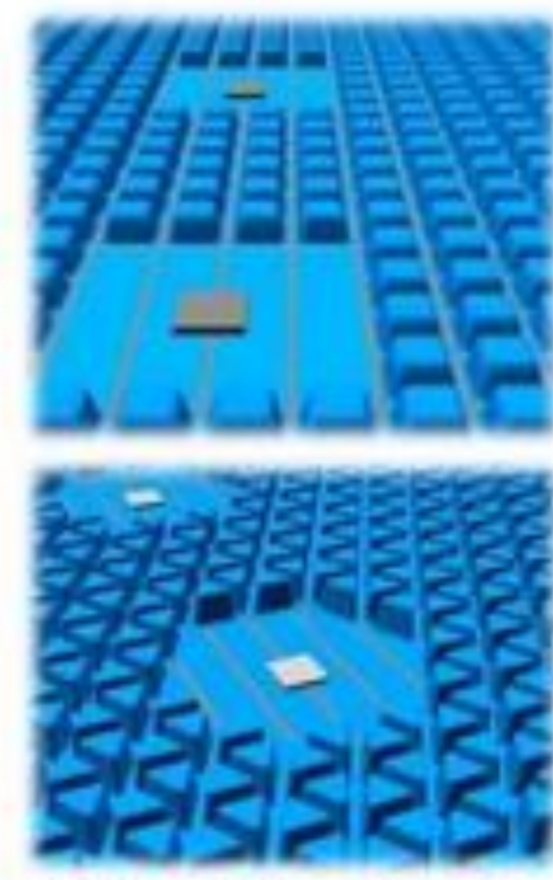
Torres de Colón. (Madrid, Spain)



9. Execution of the slabs two by two



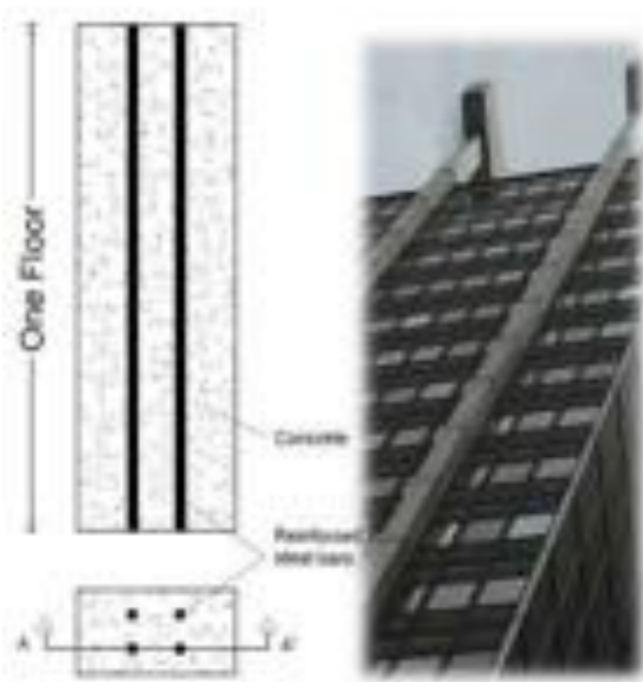
10. Plan of different forged in "Torres de Colón"



11. Difference between rectangular and triangular paneling



12. Location of the tie rods



13. Detail of the tie rods in towers "Stalexport"



14. Joining the tie rods to the forged type



15. Action of the roof in "Torres de Colón"



16. View of the towers Stalexport finish



Stalexport Towers. (Katowice, Poland)