Over the past 15 years, Zagreb, Croatia has experienced fast urban development resulting in a substantial increase in the rate of the design and execution of deep excavations. One of the key aspects of these systems is optimizing the performance and cost of the system. Even when prepared, challenges are still encountered during both design and construction execution of these systems. I will present 3 retaining structure case histories for deep excavations in Zagreb. I will focus on problems encountered by designers to economically optimize the structure to serve the competitive and fast developing market while maintaining a satisfactory safety level. Design values for anchor forces and retaining wall movements are compared with those from in-situ monitoring results of anchor forces and retaining wall movements compared to design values. Furthermore, I will present execution procedures, execution details, and sources of risks during execution. Experience from these three case histories indicates that a strong link should be maintained between designers and contractors before, during and after the execution of deep excavation projects.

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