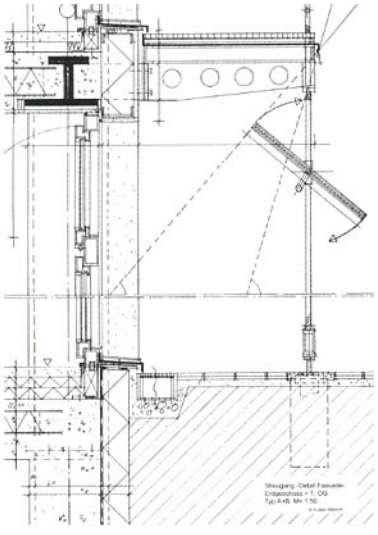


外遮阳研究大样

首钢新型钢结构住宅试点工程，2003

受首钢总公司委托，德国XYP与W+E设计联合体为首钢研发新一代节能型钢结构住宅体系。为解决不同户型的不同空间需要与钢结构系统化之间的矛盾，我们采取了一个原则、两种方法来解决这个问题。

一个原则就是沿着长边方向布置主梁，尽可能减少主梁对空间格局的影响。由于在住宅中间部分可安排一系列的辅助用房，而面光的使用空间都不受主梁隔断的影响，大大加强钢结构体系中平面布局的灵活性。

两种方法其一是内隔墙基本不动，通过房间的组合来完成各种户型的搭配；其二是通过减小跨距使次梁与楼板一体化的构造方法，完全“消灭”板下次梁，解放空间，原则上可按需求布置隔墙，保证了平面的灵活性和可变性。

防火、隔声、保温、防腐都属钢结构住宅的关键技术，我们针对住宅建筑的特点，提出了适合住宅建筑钢结构的各项技术方案，并通过对不同材料、不同构造的量化分析，最终确定切实可行的方案。在设计中，我们还通过大量的节点详图，对每一处的关键构造进行详细和定量的研究，使方案在细部构造上达到更加完美的境界。

The Pilot Project of New-Type Steel Construction House of Capital Iron and Steel Co, 2003

Entrusted by the head office of Capital Iron and Steel Co., German XYP and W+E design association research and develop a new generation's energy-efficient steel construction house system for Capital Iron and Steel Co. We adopt one principle and two approaches to solve the contradiction between the different spatial needs of different types of houses and systematized steel structures.

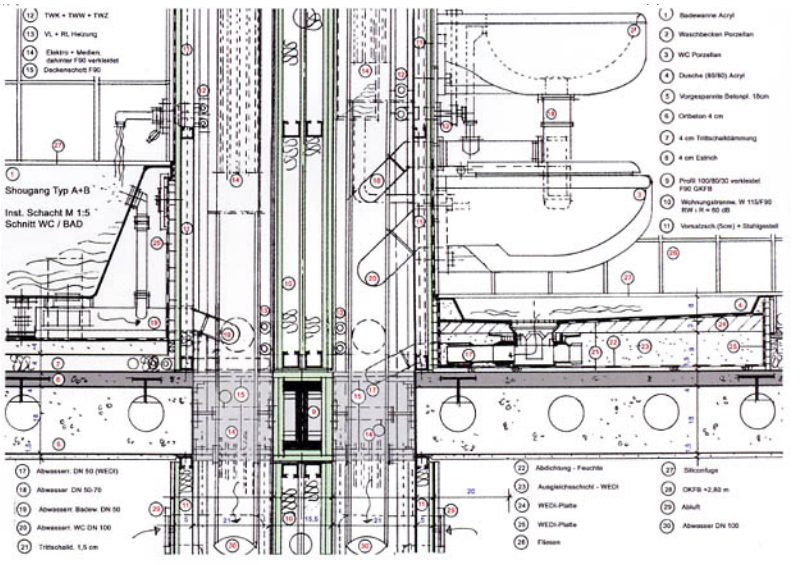
One principle is to arrange the girder along the long-side direction, which reduces the girder's impact on spatial pattern as much as possible. Due to a series of auxiliary houses arranged in the middle of the houses, the usable space facing the sun will not be influenced by the

cutting girdle, which greatly strengthens the flexibility of the horizontal arrangement in the steel construction system.

One approach is to fix the interior partition wall and accomplish matching different types of houses through room combinations. The other is to eliminate the second beam under the floorboard, and liberate the space through reducing the span and integrating the second beam and the floorboard, which in principle, can install partition walls to different needs and guarantee the flexibility and changeability of the horizon.

Fire prevention, insulation against sound, heat conservation, and anti-corrosion are all the key technology to the steel construction houses. We have put forward every technological plan for the suitable steel constructed residential houses according to the characteristic of the residential housing, and through quantitative analysis of different materials and different structures we finally confirm the feasible plan. In the design, we carry out detailed and quantitative research for every key structure in every place through a large number of nodal detail drawings, which makes the plan reach the perfect realm in terms of detailed structures.

管井大样图



立面大样图