Aerospace inspires designer

Delft - Architectural designs should be created in a cyclical process Like in aerospace components should be tested extensively in mock-ups and test environments. Only after that, the design should be finalized. That is how Martin Smit describes it in his PhD thesis.

Smit (1957) intended to be an aerospace engineer, but mathematics proved to be a barrier. After two years, he switched to architecture and he has been active as architect for more than twenty years. The passion for aerospace has stayed however; he is an enthusiastic glider pilot.

In his thesis that he wrote besides his work as an architect at Inbo Architects, he combines both interests. This week it got him the title of Doctor.

Smit studied how aerospace companies like Boeing and Lockheed develop new aircraft and tried to learn from it and use it in architecture. According to him in architecture, one does not learn enough from mistakes that have been made. By first building the critical parts and to test them, the architect can systematically arrive at an optimal design.

Smit has applied this method successfully in the renewal of hundreds of branches of ABN Amro and in a new building at the Philips Campus in Eindhoven. Façade elements, separation walls and other building components were built as mock-ups and were tested extensively. The results were useful, not only from the architectural point of view but also technically.

Tender

It is however, a problem that unlike in aerospace the one who builds the prototype is usually not the contractor for the building. First, he has to survive the tender. Smit warns in his thesis that this does not always encourage an active attitude of the partners involved.
Aerospace can also inspire architecture in a different way. Buckminster Fuller was one of the earliest adapters; nowadays Norman Foster is a well-known example of architects that like to ‘borrow’ from aerospace.

Wings

Less well known is the design of a compatriot of Foster the architect Richar Hordon. His Wing Tower in Glasgow is a very slender tower that in spite of a height of 100 meter did not need the support of wires to be stable. A special profile en two ‘side wings’ prevent the tower from vibrating as a result of the wind. The sophisticated design uses the power of the wind to get a lighter construction.

Sometimes aerospace companies try to be active in the housing market. When Fokker in the fifties had considerably less orders, it studied the possibility of producing factory made houses, built from sandwich panels. It even negotiated with municipalities to build whole neighborhoods with so-called Fokker housing. However, when the orders for new aircraft came in the housing activities stopped immediately.