Virtual planning of real estate and construction sites

VR/AR applications in the real estate and architecture sector

Visualisations of various kinds have been used for a long time to convince customers in planning in the construction and real estate sector. At the beginning, there is the construction plan of a building or a schematic representation of a residential property. Further detailed versions of these 2D representations are then coloured or created as a picture collage on the computer.

These representations are already quite accurate and look beautiful. They show the whole building or flat or a section of it. Architects, draughtsmen and illustrators can only ever depict a snapshot of the building or flat with their pictures. With virtual reality (VR) and/or augmented reality (AR), the representation of the properties in question becomes lifelike and tangible.

With conventional images and representations, many details are lost that can be perceived in a three-dimensional representation. Often the customer cannot grasp the spatial impression and the effect of a property or a flat is lost. It is completely different when virtual reality comes into play. Because then the customer not only sees his future dwelling, he experiences it. The customer can already make decisions about colours, shapes and textures at this early stage of planning. The 360° view shows how the light from outside falls into the room, it is possible to simulate the seasons and times of day, as well as the position of the sun.

If you put on VR glasses, you can walk through the flat or the building. In the future, such "walkthroughs" (virtual traversal of a room or building) will be the standard for architects' offices and real estate agents when planning and presenting to clients. It will also make it easier to coordinate construction, including the positioning and relocation of the installation. This is because no unwieldy and confusing construction plans are presented to the customer. The quality of planning increases enormously, as misunderstandings can be cleared up and changed immediately during the virtual walk-through of the property.
AR and VR will not only be used for planning and design. New dimensions are also opening up in furnishing. It is possible to virtually place interior design elements, wallpaper, floor coverings and furniture during the early planning phase. The customer is able to change colours, structures or placement and to view all of this in different lighting and environmental conditions.

It turns out that the use of VR glasses is a great relief for the collaboration of architects with clients/clients. The glasses give clients the opportunity to walk through the virtual flat with the architect and plan or furnish it as desired. It does not matter whether one participates with a tablet, computer or smartphone. If they are online, the participants can stay in the virtual environment from different locations and be present. This ensures a high degree of planning reliability and at the same time ensures customer satisfaction. This means that when the building is completed, the actual construction of the building or the furnishing of the flat, there are fewer subsequent changes because the customer was actively involved in the creation process.

The decisive advantage of using virtual reality glasses is that until now it was only possible to look at models or drawings, to look at them from the outside. The VR glasses bring the viewer into the object and allow him or her to look at it from the inside, to walk through it and to change it.

VR/AR applications in the construction phase

In today's world, when a new factory or production plant is to be built and set up, virtual technologies are involved right from the start.

From the moment the foundation for the first building is poured, each stage of the building is scanned and stored using 3D laser technology. This ensures that all design peculiarities and installations of supply and disposal lines are documented and always available. This is not only an advantage for maintenance or future conversions and extensions, but in the event of an emergency or fire, this data can also be used to provide better and faster assistance. This data is of course a good basis for creating a three-dimensional model of a factory or production hall. This model can then be set up with the three-dimensional models of the machines and other equipment even before this hall is built. The operation of this hall, as well as of the whole factory, can be imitated true to life. This shows the practicability of the planning of the operating procedure and can be changed and corrected immediately if necessary. Once the real factory has been set up, production can begin immediately under optimal conditions.

VR and AR technology are not only a great help and relief in the planning and construction of a real estate project or office building. Operating processes can be simulated and optimised in the virtual environment so that the machines in the hall can work and be used optimally right from the start.

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