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FREEFORM GLASS ARCHITECTURE AND COMPUTER TOOLS

Recent advances in glass production technologies and computer tools for modeling and manufacture of freeform geometric surfaces suggest that design of curvilinear glass architecture can become a part of daily architectural practice. The paper investigates how recent computer programs for freeform geometry design like Rhino and BIM applications like ARCHICAD and Revit enables design of curvilinear glass architecture. The geometry design programs enable user to design complex freeform surfaces and to produce proper documentation that enables its manufacturing or to make 3d printed mock-up. Unfortunately these programs dos not take into account materials from which actual objects will be made which is curtail when designing with glass. On the other hand, BIM tools enable creation of virtual building models that include information on materials and other important information for building design. Those applications have their inbuilt routines for designing curvilinear surfaces or glass facades and can import files from freeform geometry design programs. Recently, two-way connection between Rhino and ARCHICAD has been developed. The paper examines how these technologies take into account specific conditions like thermal properties, production techniques, glass-shaping and finishing, as well as the effect that glass as material enters into completed building, and gives a summary of the extent to which today's computing technologies are capable of providing design of freeform glass architecture.

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