

scSTREAM Launcher (ARCHICAD)

scSTREAM Function

Seamlessly convert ARCHICAD BIM models into input data for thermal and airflow analysis using scSTREAM

Development History of Launcher (ARCHICAD)

The need to simulate the thermal environment and conduct airflow analyses using BIM has grown over the past several years. However, in the past, designers have had to spend too much time converting the geometry model into the analysis model. This has limited the time available to perform the actual analysis and often resulted in late deliverables. To help solve these problems, Software Cradle developed Launcher (ARCHICAD) for its scSTREAM CFD software that enables designers to quickly convert the original architectural geometry data and boundary conditions into the input data for scSTREAM.

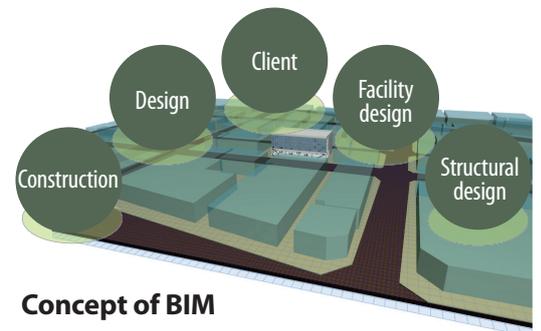
Why use native files?

Conventional translators can convert original geometry data into intermediate data (ifc), which can then be used with a multitude of different CFD software. While this may seem like an efficient approach for software developers, there are distinct disadvantages when using conventional translators. These include losing data during translation, which reduces accuracy, and the inability to accommodate additional element attribute information such as boundary conditions. Adding this information downstream can be tedious especially for large models.

On the other hand, working directly from the native files enables accurate conversion of shapes and the ability to include element attributes. This empowers designers to create CFD compatible models with less work.

What is BIM?

BIM (Building Information Modeling) is a new workflow that enables adding attribute information to 3D data. BIM can be used to share the information-added data throughout the architectural design process including design, simulation, construction, and maintenance. As a result, it is a major enabler for increasing work efficiency.

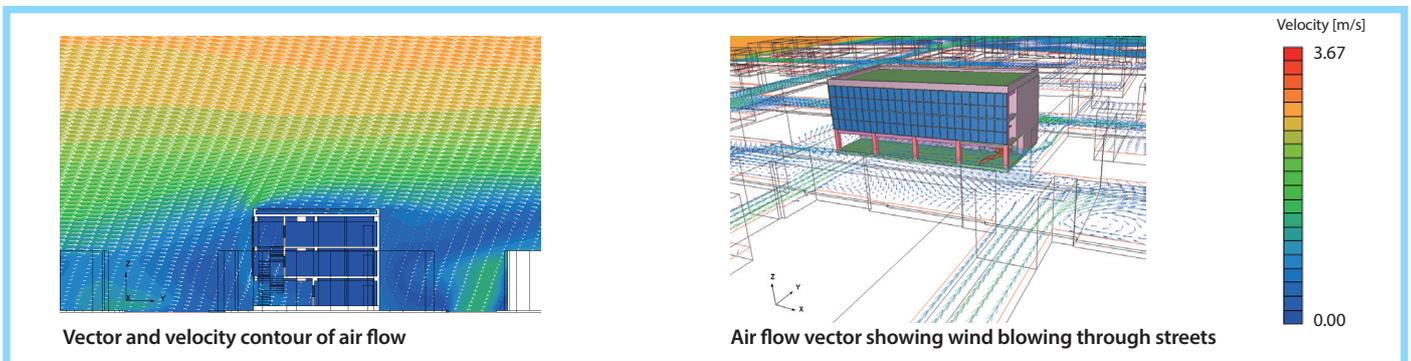


Data Conversion from ARCHICAD to scSTREAM

Type of condition	Category	Attribute	Property Name	State of heating	Entity	File	Output
Column	Obstacle					Simple	Output
Wall	Obstacle					Simple	Output
Floor	Obstacle					Simple	Output
Curtilage	Obstacle					Simple	Output
Roof	Obstacle					Simple	Output
Window	Obstacle					Simple	Output
Space	Obstacle					Simple	Output
Railing	Obstacle					Simple	Output
Site	Obstacle					Simple	Output
Other	Obstacle					Simple	Output

The user sets ARCHICAD, simplifies necessary portions automatically, and then converts the data to an analysis model.

Analysis results with scSTREAM



Notes

The scSTREAM Launcher (ARCHICAD) uses native files data created with 3D CAD. Usually architectural models are complex and consist of a large number of parts. To simplify the process, scSTREAM Launcher (ARCHICAD) collectively sets the analysis parameters. It also contains useful data conversion functions such as automatic simplification of unnecessary parts and the ability to extract levels that will be used as analysis targets. Software Cradle uses its expertise and experience gained from simplifying analysis processes for other applications and then applied them to the architectural field.

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