The Virtual Construction Lab of Schüco

Products & Service Offering

SCHÜCO
The Virtual Construction Lab of Schüco (VCL) creates high-quality, customized sales proposals in collaboration with and on behalf of Schüco Partners.

Each proposal is treated as a unique development with a custom delivery strategy in response to a set of considerations presented by project design requirements. This custom strategy is developed through a uniform process unique to VCL that embraces the spectrum of activities from preconstruction through design, engineering, procurement, fabrication, assembly, and installation.

VCL proposals can include a varying set of deliverables ranging from simple design and concept drawings to advanced animations and physical prototypes. This brochure demonstrates the range of services that comprise VCL proposals along with examples of the final deliverables.

To request the VCL services for your next building project or samples of existing proposal documents, please contact your Schüco representative.
**Services**

**Design**

Typical system details demonstrating the system concept through annotated and dimensioned line-drawings.

Custom system configurations, interface details, partial plans and elevations, anchor system and attachment mechanisms are commonly included.

**Visualization**

Specific project components represented through realistic, 3D renderings illustrating system details.

Renderings are especially effective for communicating the proposed approach to stakeholders with a less technical background.
Performance Analysis
Preliminary calculations review and confirm the given design criteria.
Analysis can demonstrate structural performance and member size verifications, evaluation of thermal efficiency and condensation characteristics, acoustic and/or blast performance.

Means & Methods
Demonstrate the sequence of events for any aspect of the project – from design and fabrication to site logistics and installation procedure.
Virtual tours of the building site with solutions to anticipated and unanticipated project challenges can be represented with top-quality digital animation graphics or printed illustration.

Prototyping
Combine 3D-printed models with actual product components to show compatibility and physically represent new parts and products.
Prototypes are scaled to show overall building features or full-scale models of components and parts for evaluating performance and appearance.
Services
Performance Analysis

Structural
The foundation of a successful project is thorough analysis, performance evaluation, and engineering. A VCL preliminary structural analysis includes,

- A review of the ultimate limit state (ULS) and serviceability limit state (SLS), ensuring specific performance requirements are met. Global and local stress analysis and stability checks as well as global and local deformation of all decisive structural members are considered as part of this preliminary structural analysis.

- For newly developed system details, planar, and spatial girder arrangements, finite element analysis and solid modelling are used to check component-suitability and optimize geometry.

Thermal / CFD
Rising energy efficiency requirements for buildings are becoming predominant design drivers making thermal analysis increasingly critical at an early stage. VCL uses thermal analysis to,

- Verify system and project energy efficiency requirements using FEA and CFD software.

- Evaluate the thermal efficiency and condensation characteristics utilizing experimental and computational programs.

Acoustic
Acoustic performance attributes are under increasing scrutiny, but remains an understudied topic in building performance.

A VCL acoustic assessment can highlight the acoustical performance of the systems and glass combined.

Supporting analysis provides insight into areas of the building which could benefit from acoustical enhancement.
Blast

Some projects may require additional evaluation for security against firearms and explosives.

VCL can utilize leading software and visualization technology for detailed analysis of a system’s blast performance.

These findings can be used as design assistance to provide the best solution in any scenario.
Deliverables
Dynamic Proposal

Applicable Services
The customer can choose all or a selection of the following services to be included in the Dynamic Proposal.

- Design Drawings
- 3D Visualization
- Performance Analysis
  Structural, thermal, acoustic and/or blast
- Means & Methods
  Digital animation and/or print storyboard sequence
- Prototyping

The Dynamic Proposal is best suited for fully custom and complex building projects where conveying the technical aspects of the design is critical. Dynamic Proposals have a minimum 6-week turnaround.

The Dynamic Proposal is the ultimate, all-encompassing VCL proposal package. The Dynamic Proposal includes a printed book and accompanying digital animation. Depending on the complexity of the project and services requested, proposal books are typically between 100 and 150 pages and animations are typically 2 to 3 minutes in length.
Unitized Facade

Customized ULC 82

DH1

1. Aluminium Profile - Core Aluminum
2. Insulated Glass Unit
3. Pressure Plate
4. Cover Cap - Cover Joint
5. Sub-Frame
6. Centre Gasket
7. Aluminium Grouting Profile
8. Special

Note:
9. Joint - Gap Anodized
10. Sealed Tie Rod Kit
11. Additional Jointing Material

Proposal book spread showing a technical drawing and 3D rendering
Deliverables
Feature Animation

Applicable Services
The customer can choose all or a selection of the following services to be included in the Feature Animation.

- **Performance Analysis**
  Thermal, acoustic and/or blast

- **Means & Methods**
  Digital animation

The Feature Animation is suited for fully custom and complex building projects. Feature Animations have a minimum 6-week turnaround.

The Feature Animation is similar to the Dynamic Proposal, but does not include a printed proposal book – only the digital animation. Depending on the complexity of the project and services requested, Feature Animations are typically 2 to 3 minutes in length.
Screenshots from various Feature Animations
Deliverables
Clip Brochure

Applicable Services
The customer can choose all or a selection of the following services to be included in the Clip Brochure.

- 3D Visualization
- Means & Methods
  Animation clips of standard Schüco facade systems

The Clip Brochure is best suited for less complex building projects using standard Schüco systems. Clip Brochures have a minimum 2-week turnaround.

The Clip Brochure is a compressed version of the Dynamic Proposal, providing customers with a high-quality deliverable in a fraction of the time. The brochure includes a custom-printed booklet and a digital touch screen display. The booklet includes an overall “hero” shot rendering of the building project, a brief written overview and schematic 2D representation of the facade, two (2) rendered views of a single detail, and a full-bleed rendering of the building facade. The touch screen displays four (4) individual video clips, each typically 10-20 seconds in length. The clips feature standard Schüco unitized or stick-built facade systems demonstrating the (1) bracket installation, (2) system installation, (3) gasket and sealing, and (4) additional features.
TOP LEFT  Closed Clip Brochure
BOTTOM LEFT  Examples of Clip Brochure booklet contents
RIGHT  Open Clip Brochure (booklet on top, touch display below)
VCL allows us to validate system design and to see things earlier on so that we can mitigate the risk of unforeseen labor requirements. VCL is a wonderful tool for us – it’s cutting edge and it really puts us ahead of our competition.

MURRAY ALTMAN, PRE-CONSTRUCTION MANAGER
CONTRACT GLAZIERS INC., USA & CANADA

I have never seen such a facade presentation and it made a very good impression – both the animation and the book. The VCL design proposal gives people who are not entirely “familiar” with façade technology a good understanding of how the facade is constructed and the opportunity to assess the visual impression it will have. For facade experts who are familiar, they can also check the proposed solution in the book and find the details represented in 3D.

MICHAL ZAGORA, PROCUREMENT SPECIALIST | ENVELOP | SK HB REAVIS, SLOVAKIA