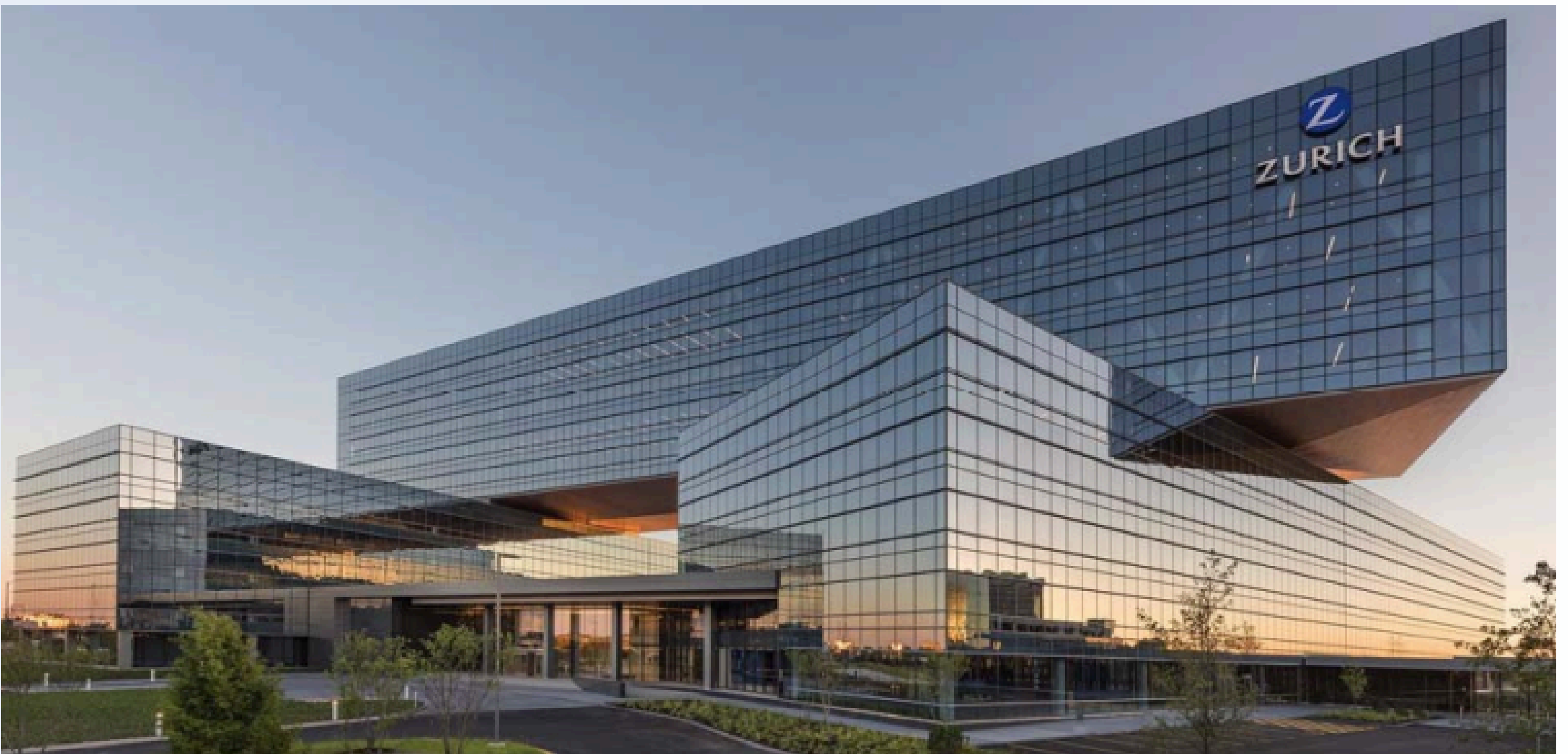


COGENERATION SWITCHGEAR FOR ZURICH NORTH AMERICA

Products: SAI AGC-4 Generator, Main & Tie Controls, 15 kV Metalclad Switchgear, SAI 19" Touchscreen Controls, GE RX3I PLCs, and SEL 751 & 700G protective relays.

Issue: Zurich North America, a global insurance company, was designing a new headquarters in Schaumburg, IL. As part of their objective to obtain a LEED Platinum 1 certification for the facility, they planned to utilize natural gas generators to provide as much of their building power as possible. Not only would this allow them to reduce their reliance upon utility power, but it would also better ensure reliability of service to their numerous critical operations.



The power distribution design consisted of two separate busses, each fed from a separate utility source and providing power to different parts of the facility. Each utility source would be backed up by a dedicated generator. Upon loss of one or both of the utility sources, they needed to keep their core operations running by utilizing their generators and any remaining utility source. This would necessitate automatic load shedding of less critical operations, so the more critical loads could be supported until the return of the sources. Based on the conditions of the sources and the desired mode of operation, the system would need to transfer or shed downstream loads accordingly. Upon restoration of a lost source, SAI controls would validate the return of the source, restore the system to normal operating mode and return all previously shed loads.



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Solution: SAI worked with Commonwealth Edison, the Zurich facilities engineers, the manufacturer of the generators, and several consulting engineering firms, and developed a complete control package to meet the requirements of all of the involved parties. The SAI control package included the SAI HMI and PLC Master Control System to manage all aspects of the load distribution. Also included was the SAI AGC-4 Automated Generator Controller for utility, tie, and generator controlling, monitoring and paralleling. SEL 751 and 700G protective relays were included to provide the required utility protections, as well as all necessary VCB breaker settings. The switchgear was designed using Schneider Masterclad VR circuit breakers, with SAI control components and wiring. A remotely mounted SAI Master Control System was also provided for safe operation from outside of the electrical room. All field connections were verified by SAI service engineers, and in addition to the standard startup and commissioning process, the system also underwent a witness test and approval by the responsible utility.

Results: The SAI cogeneration automation system was installed and commissioned successfully, and the 783,000 sq. ft. state of the art complex received LEED Platinum 1 Certification.

