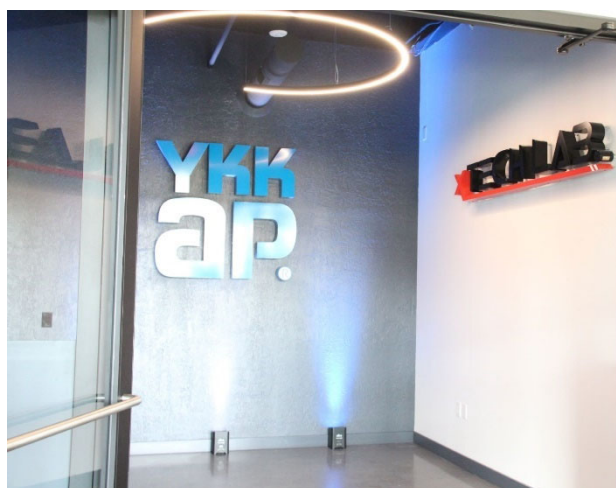


YKK AP Technologies Lab (NA) Opens xTech Lab

Promoting DX-Based Smart Factorization and Generating Innovation as a Digital Research and Development Base

YKK AP Technologies Lab (NA) Inc. (location: Pittsburgh, Pennsylvania, USA; President: Masaru Okano), an overseas affiliated company of YKK AP Inc., opened xTech Lab on July 10 (local time) as a digital research and development base. Mill 19 is also home to companies, a university, research facilities, etc.

xTECH LAB.



(Left) xTech Lab entrance (Right) Exterior of Mill 19, the location of xTech Lab

YKK AP began joint research in 2019 with Carnegie Mellon University (CMU; Pittsburgh, Pennsylvania) on themes including windows and doors installation using robots and IT technology. This is aimed at utilizing R&D in the digital field to solve issues faced by the industry, such as the shortage of sash and curtain wall installation technicians at construction sites. YKK AP Technologies Lab (NA) Inc. was established in June 2022 and is working to cultivate digital global human resources from this base in the United States, a country with advanced technologies and personnel in the digital field.

To further enhance its R&D efforts, YKK AP Technologies Lab opened xTech Lab inside Mill 19, a research space with a university, companies, and research institutions. xTech Lab is a place for surveys, research, and development on various digital component technologies. Efforts will be made for digitalization using 5G, robots, AI, and other technologies to promote “smart factorization,” one of the company’s priority measures. xTech Lab also strives to provide digital support for transforming YKK AP Group companies in Japan and abroad, including virtual factories to help build sustainable production structures that can immediately

adapt to changes in the market (which is the true purpose of smart factorization).

By opening this base at Mill 19 (where CMU has a research institute), YKK AP hopes to accelerate joint research and to boost installation productivity and quality. At this location that draws together advanced technologies, the company will generate innovations with an eye toward collaboration with many different research institutions.

Example themes at xTech Lab

Virtual factories

Digital twin technology is used to create a virtual production environment on a computer for existing manufacturing lines. By simulating equipment layouts, processes, and other factors to optimize production activities in the factory, the aim is to build virtual ECM and SCM systems. The company plans to begin working on this theme at the end of FY2023.

* Engineering chain management (ECM): The process comprising product planning, production planning, product development, production preparations, and production

* Supply chain management (SCM): The process comprising estimates, order receipt, procurement, production, shipping, and collection

5G

The company is building a local 5G network to verify the transmission of enormous amounts of data. By switching factory control networks from wired networks to 5G, it is striving to create automated, remote manufacturing sites with no human operators. The verification project has been completed, and the company is currently preparing to start an evaluation project inside a new factory.

Robots

YKK AP is using robots to automate processing, transport, production, business tasks, and maintenance after completion. The company has built robots specialized in window-related tasks through joint research with CMU. Moreover, it is researching robots for different applications at xTech Lab, selecting robots that can be applied to its businesses and implementing robots for tasks and duties. The company is also striving to bring into practical use AI-equipped robots with different structures from humans. It is currently creating a range of robots and working to augment their functions, including automated driving.

■ Overview of xTech Lab

Name	xTech Lab by YKK AP Technologies Lab (NA) Inc.
Opened	July 10, 2023
Address	Mill 19, Pittsburgh, Pennsylvania, U.S.A.
Person responsible	Shiori Fukada Senior Vice President, CIO & CDO (Chief Information Officer & Chief Digital Officer), YKK AP Inc.
Area	704 m ²

Number of employees	Planned number of 22 (FY2023)
Capital investment	330 million yen

[Reference] Overview of YKK AP Technologies Lab (NA) Inc.

Name	YKK AP Technologies Lab (NA) Inc.
Established	June 1, 2022
Address	Mill 19, Pittsburgh, Pennsylvania, U.S.A.
Capital	2 million USD
President	Masaru Okano
Business	Research and development in the digital field 1) Research and development to digitalize production, installation, design, and development sites 2) Research and development to digitalize customer products and services 3) Cultivating digital global human resources