

Expo 17 building - Kazakhstan

The Expo 17 building takes form and are already finishing in 2017. The visitors can expect to see a range of green themed buildings, pavillions and exhibits. The building is a green building that lives up to all environmentally requirements. FlowCon International has delivered solutions for the project.

The theme chosen for the Expo 2017 is "Future Energy". The theme is aimed to concentrate on the future of energy, as well as innovative and practical energy solutions and their impacts. The subtitle of Expo 2017 is "Solutions for tackling human kinds greatest challenge". Therefore the Expo will show future energy solutions tackling social, economic and environmental challenges. In 2012 was Astana chosen as the venue to host Expo 17 and it will be the first time that a major international exhibition of this kind is coming to a country from the former Soviet Union.

More than 100 countries and around 2-3 million people are expected to visit Expo 17 from June to September 2017. There are planned 25 hectares for the pavilions of Expo 2017 and the site has a convenient access to Astanas City center, the international airport and the railway station.

The Expo Site is also linked with a network of Kazakhstan's inter-city roads to ensure a quick access from all the countries. Construction began in april 2014 with 20 companies from Kazakhstan and 49 companies from around the globe where FlowCon International was one of them.

The lead design contract was awarded to the American architect Adrian Smith + Gordon Gill Architecture.

Several construction companies have been awarded contract to build the grounds with a cumulative value of 5 billion tenge (about 2.910.000 dollars). The main contractor is Sembol Inshaat and they got contracts with Plast Invest Production LLP, Sonik Company LLP, PolimerMetal-T LLP and Alyugal LLP.

Construction works on the highly anticipated Expo City 2017, designed by Adrian Smith and Gordon Gill Architecture are well underway in Astana, Kazakhstan. The 429-acre master plan responds to the Expo Theme "Future Energy" so visitors can expect to see a range of green themed buildings, pavillions and exhibits.

Expos is a series of world fairs whose aim is to promote progress, foster global cooperation, educate the public on hot topics and share innovations.

Architecture forms a crucial part of all Expos. Previous events have been home to some works that have gone on to become truly iconic.

Expo 17 will be with amazing architectural pavilions and designs. While no major studios have released plans for their respective country's exhibition spaces at the time of writing, the british pavilion is projected Architecture forms a crucial part of all Expos.

Expo city forms a crucial part of Kazakhstan's drive to improve green building and renewable energy standards across the country. Indeed the festival site will form part of Astana's overall development.

The project focuses on using renewable energy as the primary source for infrastructure and daily operation of the buildings. Each element of the design aims to encourage and support the idea of clean energy across the project, which will feature exhibition and cultural pavilions, a residential development, commercial areas, educational and civic facilities, as well as parks and parking.

Located at the very heart of the campus, the sphere-shaped Kazakhstan Pavillion will be a true symbol of the “Future Energy” concept. Its transformative skin will reduce thermal loss and reduce interior solar glare, at the same time increasing the buildings energy output through integrated sustainable systems such as photovoltaics. FlowCon International started to work with Expo 2017 back in 2012. We held technical seminars for contractors and designers. During 2014 FlowCon invested in giving companies information about FlowCon International energy saving solutions and held meetings with decision makers and Contractors.

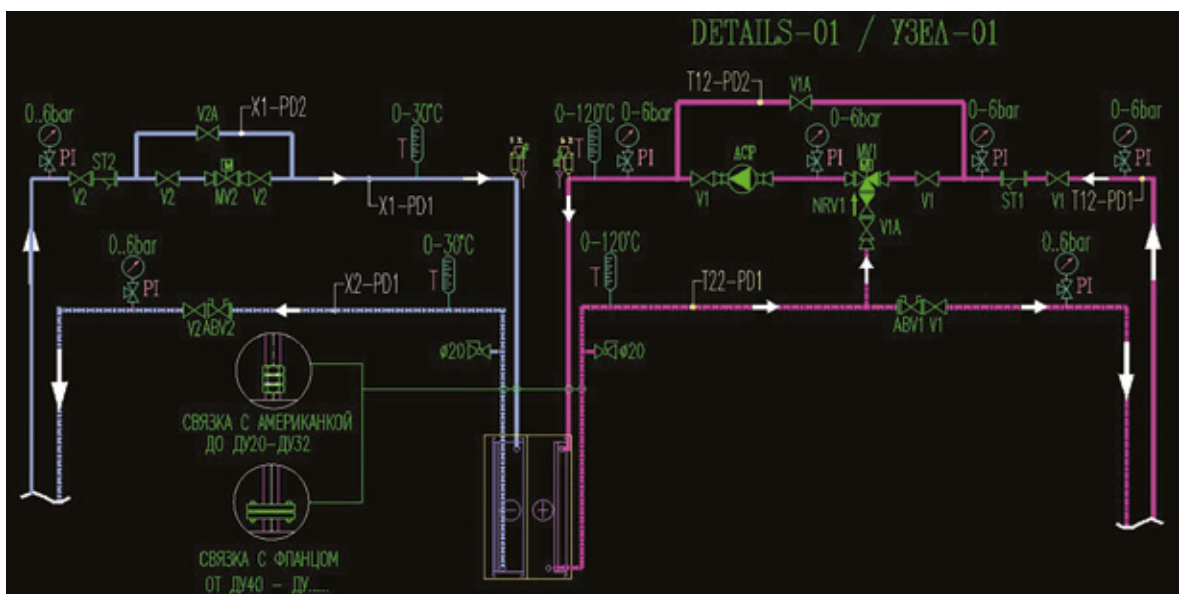
Each building was designed to reduce energy use and increase the amount of clean energy that can be harvested. The building forms are the direct result of a considerate and thorough design process. In addition to the excellent energy performance of individual building, the architects ensured that the entire development will be interconnected by including a smart energy grid, smart recycled water grid, integrated waste management system and inter-seasonal underground thermal energy storage. After the Expo, the site will be converted into an office and research park for international companies and entrepreneurs.

The complex will comprise 4000 apartments, a new hotel, a Congress Hall and an indoor city stretching from the university to the center. The exhibition area will involve the national pavilion of Kazakhstan as well as international thematic and corporate pavilions. There will be shopping malls, entertainment and service facilities as well. The total area of the exhibitions stands at 174 hectares. The facilities will be maintained with the help of the energy-saving technologies. The buildings will be certified according to the Breem international standards. FlowCon has provided advice on technical solutions for AHU part, which gives the project the best possibility to be a success and environmentally friendly project.

In the figure below you can see how FlowCon International had made calculations about fewer valves. Instead of two valves the project only needed one FlowCon valve, which means better flow, more effective with less pressure loss and thereby savings.

After the exhibition the facilities of Expo 2017 will be used for the new financial center titled Astana that will also have a special status. Kazakhstan is a member of the International Exhibitions Bureau since 1997 and has been taking part in Expo since 2005.

СХЕМЫ ТЕПЛО- И ХОЛОДОСНАБЖЕНИЯ ПРИТОЧНО-ВЫПЯЖНЫХ УСТАНОВОК



Project configurations

FlowCon is supplier of more than 50 wafers to Expo 17 project. The Expo 17 project configurations are as per below;

Consultant: The lead design contract is at the American architect Adrian Smith + Gordon Gill Architecture.

Contractor: Sembol Inshaat

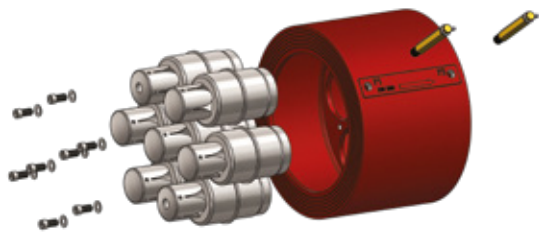
Project Name: Expo 17 building, Kazakhstan

Delivering: FlowCon International has delivered more than 50 Wafers to the project

Configuration: FlowCon Wafer

Type of job/Application: Cooling

Date of installation: Finished in 2017



History of the Expo 17 building

A certain futuristic aesthetic has been worked around into each of Expo 17's requisite structures. During the first phase of construction, which is well underway after the initial ground breaking ceremony in 2014, a wealth of self-sustaining building will be built.

As well as the exposition pavilions, which will host each visiting nation's attraction for Expo 17's duration, a hotel, retail art and performance spaces plus residential and office accommodation will be incorporated into the masterplan. All buildings will be hooked up to a "smart-grid" that will allow each structure to become a generator of power.

Kazakhstan's President Nursultan Nazabayev has taken Rifkin's ideology to heart. Eco City, President Nzabayev hopes, will be the first major step in turning Kazakhstan into a truly sustainable country.

Origin, Serviceability, Performance, reliability and monitoring. FlowCon International was one of the only companies capable of providing such under a complete package.

Origin: All products were required to be 100% European/USA origin, including subcomponents. Materials for each process were required for documentation and to make sure it has the best quality.

Serviceability: The FlowCon International products that are supplied are modular built and can be disassembled for service without removing the valves from the pipeline. Spare parts can furthermore be purchased and replaced by the local distributor or by staff from the FlowCon International office.

Performance: Each insert is manufactured to deliver a specific flow rate over a wide operating range of differential pressures at a tolerance of +/-5%. This is done by automatically adjusting the open orifice area of the insert in reaction to change in pressure. For instance a 150 mm (6") wafer containing four inserts i.e two at 4.00 l/sec and two at 5.05 l/sec, will have a total flow rate of 18.1 l/sec.

Reliability: The FlowCon wafers and valves had been installed in buildings globally for more than 10 years at the time of order.

The flow rate inserts are calibrated for water at approximately 16 degrees Celcius.



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