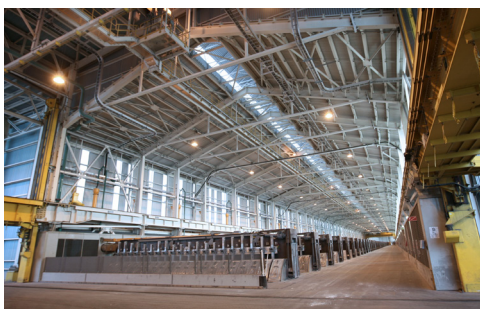
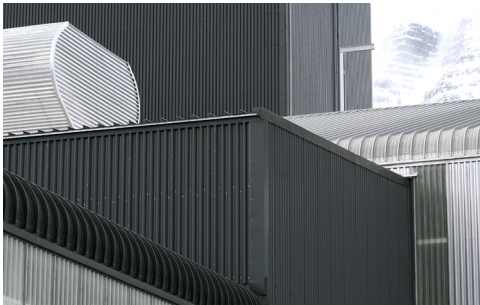


Alcoa Aluminum Smelter



Project description

The design of the Aluminum Smelter in Reyðarfjörður is based upon a 1st prize entry in an invited architectural design competition held by Alcoa/Bechtel in year 2003. TBL architects (subsidiary company of Batteríð architects and two other Icelandic architectural firms), won the ambitious competition to enhance the structure and landscape of Alcoa's Fjarðaál aluminum smelter complex.

The project objectives included the challenging task of integrating the new high tech aluminum smelter into the local community of 1.000 inhabitants (4.500 totals in the region) in reconciliation with the inhabitants.

In the overall design of the facilities the architects objective was to respond to the harsh climate of the eastern part of Iceland; climate characteristic for its heavy winds and snow loads as well as long dark winter periods without daylight.

The architects were required to revisit the look and feel of industrial buildings following a challenging environmental agenda, partly based on LEED.

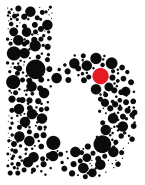
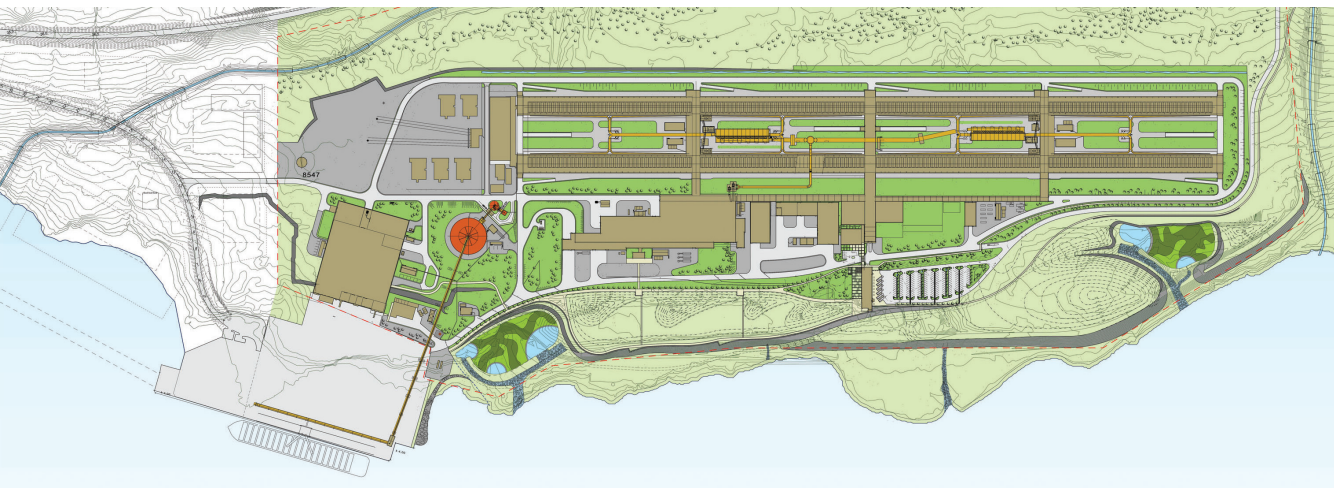
The main objective for the new smelter was to reduce carbon dioxide emissions from aluminum production and to use green power resources to energize the smelter. That was met by utilization of hydro power in the production and enhanced "carbon capture" technology.

The architects were involved in the project from initial design to final completion and developed a holistic approach to the site, simplifying the underlying geometric qualities of the buildings to create a strong and coherent identity.

The design focused on the infiltration of natural light into the buildings to enhance the experience of the internal working environment and to improve the working conditions. A modular system of translucent fiberglass and aluminum panels was used to clad the walls of all facilities of the smelter, ensuring as much daylight permeation as possible.

Untreated aluminum, the primary external cladding material picks up the hues of the external environment, making the color tone of the buildings shift in line with the weather and seasons. In daylight aluminum and fiberglass become almost identical and appear as a continuous surface, but as twilight slowly approaches the internal lighting begins to glow through, creating a lattice effect of seemingly random slits in the facade, visible from far away.

The architectural design includes all facilities accommodating over 600 employees, and modular camp units for more than 1.800 construction workers during construction. The smelter facilities consist of administration building with offices, teaching & training facilities, canteen & industrial kitchen, change room facilities, high tech laboratories and production facilities for over 360 thousand tons of aluminum annually, as well as harbor facilities and sewage treatment plant.



Alcoa Aluminum Smelter



The project was managed by Bechtel and met the client's tight budget and time schedule.

The project earned Iceland's highest environmental award, the Conch, for generating minimal landfill waste and discharging no polluted water during construction.

Publishing in Northern Lighting Design Book is pending.

Project information

Project name	Alcoa Fjarðarál
Address	Reyðarfjörður, Island
Client	Bechtel / Alcoa
Architect	TBL architects (owned by T.ark, Batteríð & Landslag)
Landscape architect	TBL (Landslag Ltd.)
Consultants:	
Engineers	Bechtel, HRV, Línuhönnun
Entrepreneur	Bechtel
Size m2	200.225m2
Cost	1,5 billion USA Dollar
Date	2008



Client references

Tómas Sigurðsson CEO of Alcoa Fjarðarál
Sudurlandsbraut 12 108 Reykjavík Iceland
phone: +354 470 7900 fax: +354 470 7901
e-mail: tomas.sigurdsson@alcoa.com

Sveinn Jónsson Building Manager ALCOA Fjarðarál
Midvangur 2-4 700 Egilsstaðir Iceland
phone: +354 470 4052 mobile: +354 893 1287
e-mail: sveinn.jonsson@alcoa.com

