2015 TS2 Jinah Kim, Material:Aluminium

10 Hills Place, London

Inspired by the art work of Lucio Fontana large glazed areas orientated towards the sky are slashed into the fa ade, maximising the natural light available in this narrow street.

This sculptural form is achieved using a system of aluminium profiles used in the production of high quality, ship hulls. The facade is fabricated using curved 140mm wide aluminium profiles that are connected together on-site, using a tongue-and-groove system ensuring water-tightness and construction efficiency. The metallic silver finish is a high performance durable paint typically used on super yachts. The use of self-cleaning glass and an ingenious detail of hidden gutters within the eyelids ensures the facade remains low maintenance.

The ground floor is fronted by a bespoke laminated glass in which is sandwiched a stainless steel mesh and semi opaque interlayer over a dichromatic film. This is lit from behind, using fibre optics to generate a coloured moir· pattern providing dynamic visual interest and a feeling of depth to what would otherwise be a blank wall.

Aluminium

Aluminium is a silvery white, soft, nonmagnetic, ductile metal. Aluminium is the third most abundant element, and the most abundant metal in the Earth's crust. It makes up about 8% by weight of the Earth's solid surface. Aluminium metal is so chemically reactive that native specimens are rare and limited to extreme reducing environments. Instead, it is found combined in over 270 different minerals.
Aluminium is remarkable for the metal's low density and for its ability to resist corrosion due to the phenomenon of passivation. Structural components made from aluminium and its alloys are vital to the aerospace industry and are important in other areas of transportation and structural materials. The most useful compounds of aluminium, at least on a weight basis, are the oxides and sulfates.
Owing to their prevalence, potential beneficial (or otherwise) biological roles of aluminium compounds are of continuing interest.

Physical

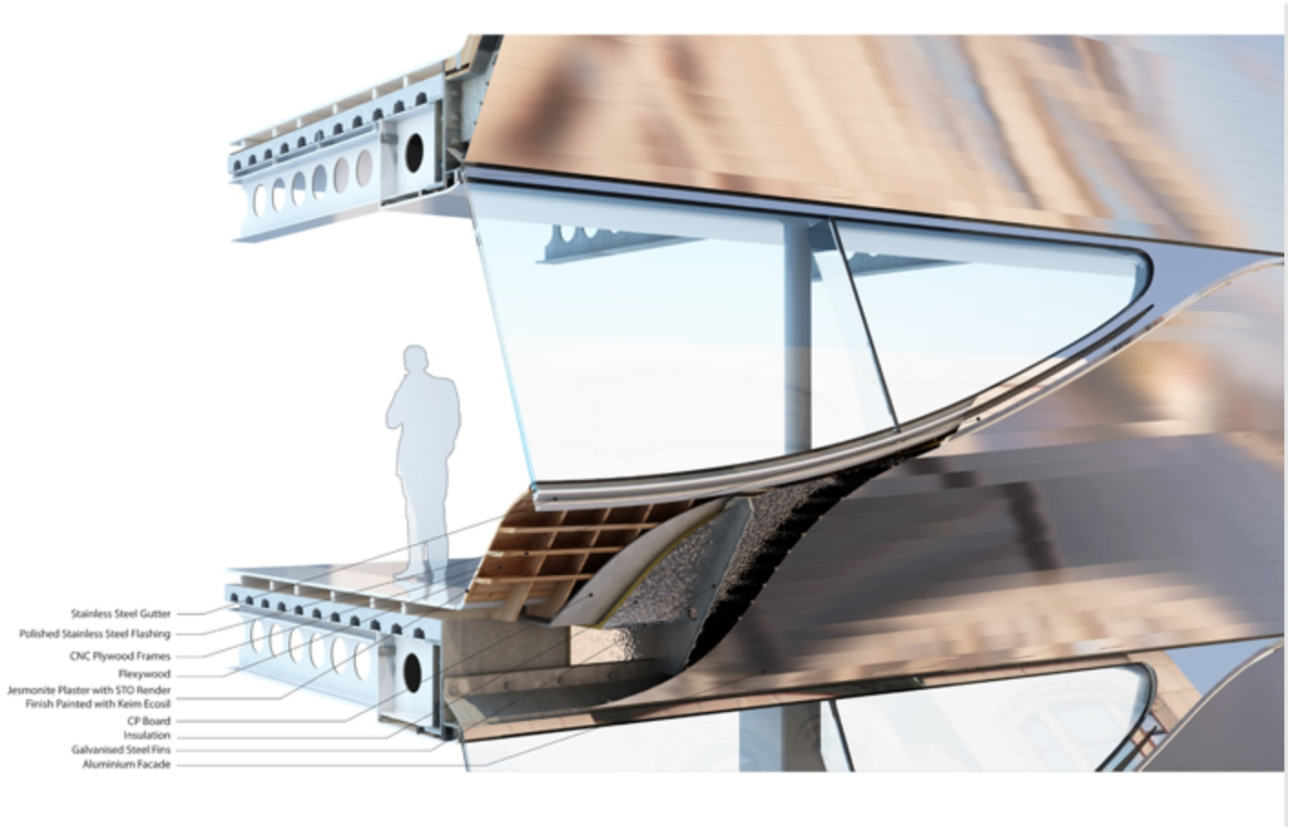
Aluminium is a relatively soft, durable, lightweight, ductile and malleable metal with appearance ranging fom slivery to dull grey, depending on the surface roughness. It is nonmagnetic and does not easily ignite. A fresh film of aluminium serves as a good reflector (approx. 92%) of visible light and an excellent reflector (as much as 98%) of medium and farinfrared radiation. The yield strength of pure alumiuium is 7-11 Mpa, while aluminium alloys have yield strengths ranging from 200 Mpa to 600 Mpa. Alumium has about one-third of the density and stiffness of steel. It is easily machined, cast, drawn and extruded.

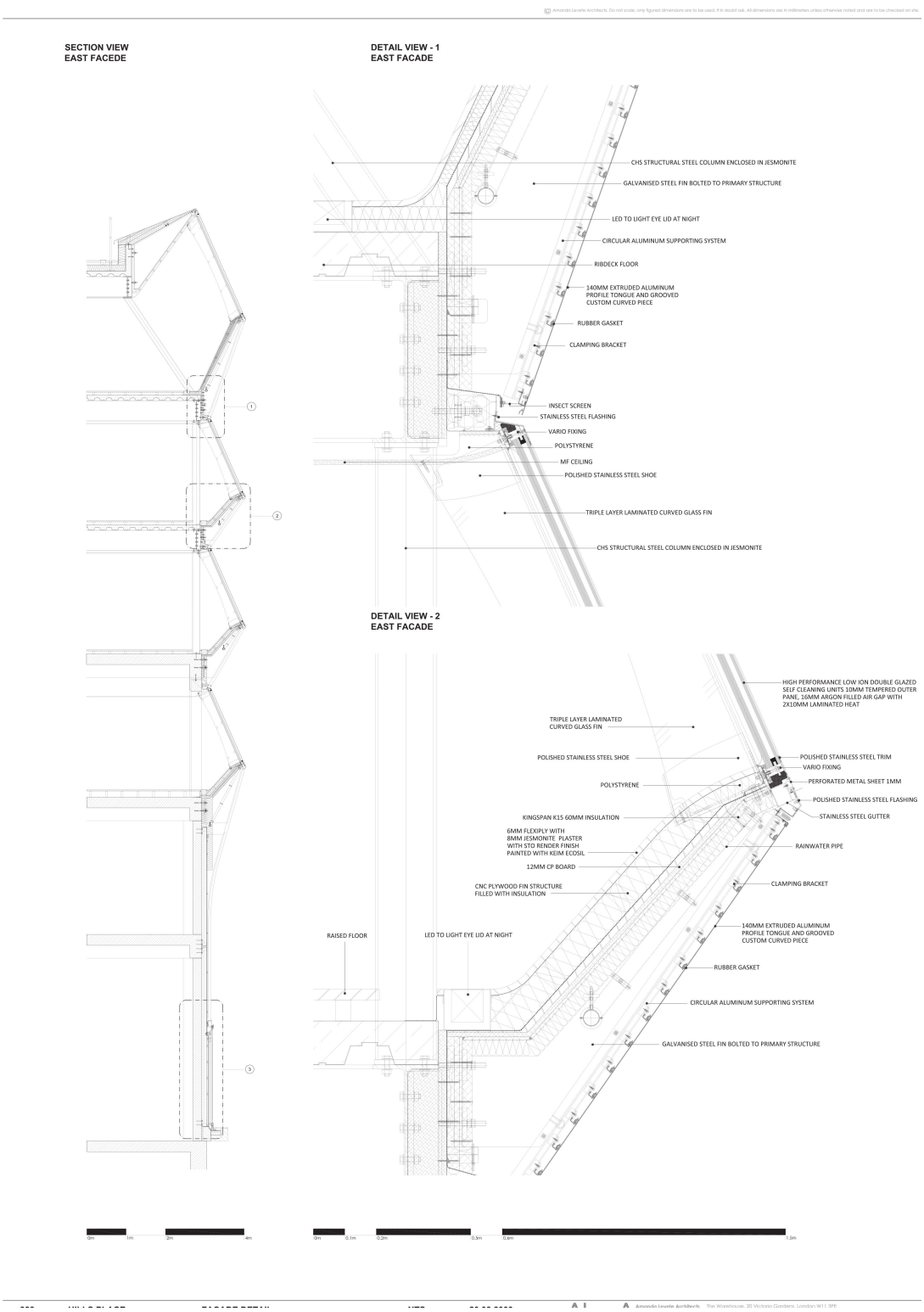
Alumiium is a good thermal and electrical conductor, having 59% the conductivity of copper, both thermal and electrical, while having only 30% of copper's density. Aluminium is capable of being a superconductor, with a superconducting critical temperature of 1.2 Kelvin and a critical magnetic field of about 100 guass(10milliteslas).

Chemical

Corrosion resistance can be excellent due to a thin surface layer of aluminium oxide that forms when the metal is exposed to air, effectively preventing further oxidation.The strongest aluminium alloys are less corrosion resistant due to galvanic reactions with alloyed copper. This corrosion resistance is also often greatly reduced by aqueous salts, particularly in the presence of dissimilar metals.
Owing to its resistance to corrosion generally, aluminium is one of the few metals that retain silvery reflectance in finely powdered form, making it an important component of silver-colored paints. Aluminium mirror finish has the highest reflectance of any metal in the 200–400nm (UV) and the 3,000–10,000nm (farIR) regions; in the 400–700nm visible range it is slightly outperformed by tin and silver and in the 700–3000 (near IR) by silver,gold, and copper.

Aluminium is theoretically 100% recyclable without any loss of its natural qualities.
In Europe aluminium experiences high rates of recycling, ranging from 42% of beverage cans, 85% of construction materials and 95% of transport vehicles


Stainless Steel Gutter
Polished Stainless Steel Flashing
CNC Plywood Frames
Flexywood
Jesmonite Plaster with STO Render
Finish Painted with Keim Ecosil
CP Board
Insulation
Galvanised Steel Fins
Aluminium Facade



References

http://www.ala.uk.com

http://www.architectsjournal.co.uk/Journals/1/Files/2009/9/10/05_facade%20detail%20a.pdf

http://www.architectsjournal.co.uk/Journals/1/Files/2009/9/10/06_facade%20detail%20b.pdf

http://en.wikipedia.org/wiki/Aluminium