



SIR NICHOLAS GRIMSHAW

Green Architect

WHO IS HE?

- ▶ Graduated with honors from the Architectural Association in 1965
- ▶ He immediately started his own practice
 - ▶ Won many architectural awards for his buildings in the 60's and 70's
- ▶ 1980 – Nicholas Grimshaw and Partners Ltd was formed
 - ▶ Now GRIMSHAW ARCHITECTS LLP
 - ▶ Offices in London, New York, Melbourne, and Sydney
- ▶ 1994 - Elected a Royal Academician
- ▶ 2002 – Knighted by Queen Elizabeth II
- ▶ 2004 – Elected President of the Royal Academy of Arts



GRIMSHAW ARCHITECTS, LLP

- ▶ 2000 – GRIMSHAW became one of the first practices in the UK to achieve certification for the ISO 14001 (International Environmental Management System standard)
 - ▶ They created an architectural tool, EVA (Environmentally Viable Architecture) to assess the impact of buildings on the environment at the earliest stage in the design process
 - ▶ Analyses energy and cost issues



His Projects:

WHY GRIMSHAW IS GREEN...

THE EDEN PROJECT

*Cornwall, UK
Completed in 2000*



- ▶ Site on previous brownfield
 - ▶ China Clay industry waste site
- ▶ Super insulation
- ▶ Natural lighting & ventilation
- ▶ Energy generation
 - ▶ Solar panels
- ▶ Rainwater harvesting
 - ▶ Flushes toilets and waters plants
- ▶ Reduced water usage
 - ▶ Low flush toilets and fixtures
- ▶ Sustainably sourced materials
 - ▶ Recycled materials used
 - ▶ Low material usage
 - ▶ Low carbon products
- ▶ Concrete used
 - ▶ 90% of aggregate was locally sourced

VAUGHAN METROPOLITAN CENTRE SUBWAY STATION

Toronto, Canada

Currently under construction

Expected to be completed in 2015



- ▶ Cool roof to main entrance
 - ▶ high solar reflectance to reduce heat absorption
- ▶ Green roof to electrical substation
- ▶ Increased daylight levels to reduce electric lighting power usage
 - ▶ bird-friendly fritted glass
- ▶ LED lighting in pylon signs, and energy efficient lighting in illuminated wayfinding signage
- ▶ Water efficient plumbing fixtures
- ▶ Energy efficient HVAC system
- ▶ Reduced storm water runoff into the municipal drainage system
 - ▶ Green roof landscaping and soft landscaping areas adjacent to other building runoff areas
- ▶ Bicycle parking
- ▶ Landscaping with native and drought tolerant species

PULKOVO AIRPORT

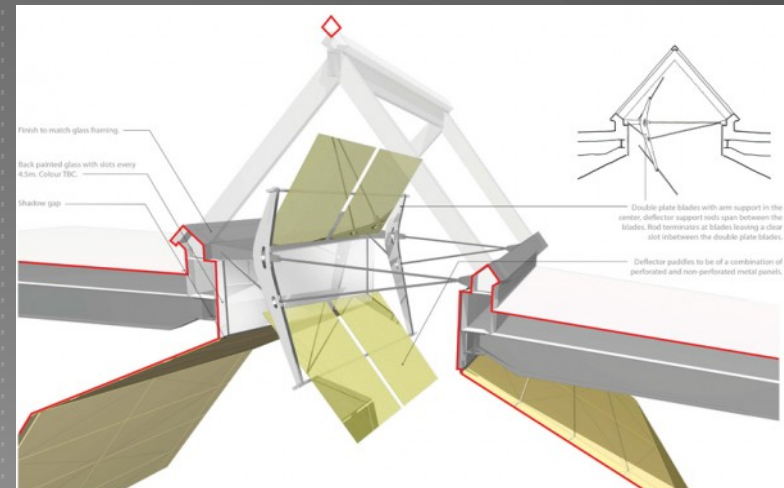
St. Petersburg, Russia

Currently under construction

Expected to be completed by Dec 2013



- ▶ Natural lighting
 - ▶ Skylights
- ▶ Passive solar
 - ▶ Thermal mass and filtered solar exposure
- ▶ Snow loads help to insulate roof structure

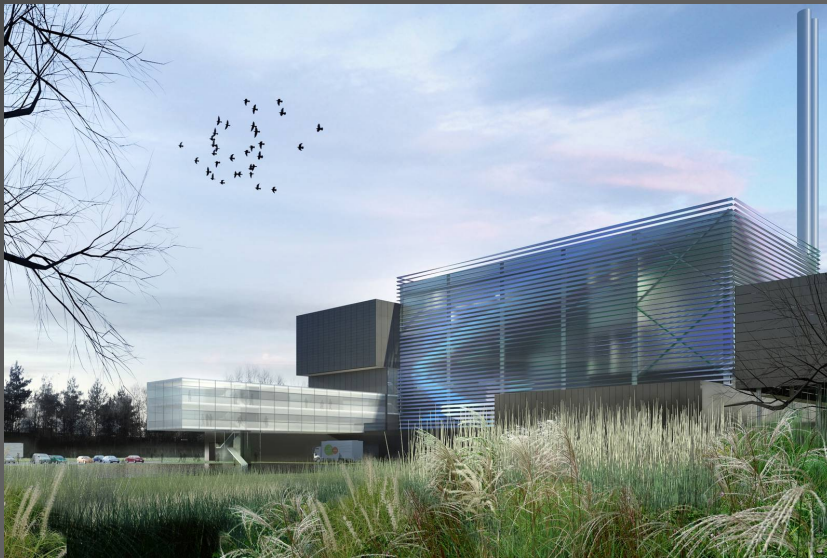


SITA ENERGY FROM WASTE FACILITY

Suffolk, UK

Currently under construction

Expected to open in 2014



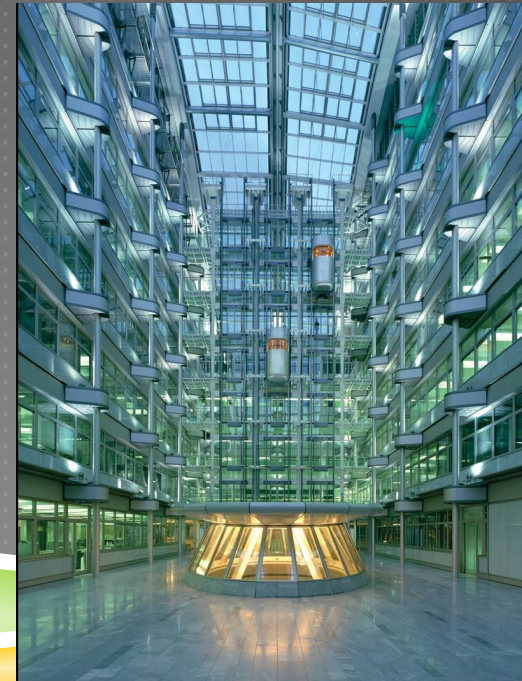
- ▶ Built on existing brownfield
- ▶ Uses CHP (combined heat and power)
- ▶ Natural daylighting
- ▶ Natural ventilation
- ▶ Rainwater harvesting
- ▶ Grey-water flushing
- ▶ Electricity produced will power 30,000 homes
- ▶ Ash by-product can be used for road aggregate

LUDWIG ERHAUD HAUS

*Berlin, Germany
Completed in 1998*



- ▶ Natural ventilation
- ▶ Natural ventilation
 - ▶ Atrium spaces
- ▶ Daylighting & solar controls
 - ▶ Reduces need for artificial lighting



SOURCES

- ▶ <http://www.stylepark.com/en/designer/nicholas-grimshaw>
- ▶ http://www3.ttc.ca/Spadina/Stations/Vaughan_Metropolitan_Centre_Station/index.jsp
- ▶ <http://www.bdonline.co.uk/buildings/bd-reviews/drawing-board-sita-uk-energy-from-waste-facility-by-grimshaw/5018440.article>
- ▶ http://www.euro-inox.org/pdf/paper/EskoMiettinen_EN.pdf
- ▶ <http://archrecord.construction.com/projects/portfolio/archives/0801acerohorno-2.asp>
- ▶ <http://cache.wists.com/thumbnails/5/4c/54c18af3ed78e6df769b6ae5269bb313-med>