



**100 Bishopsgate, City of London**

*Olukoye Akinkugbe  
Inter 4  
2nd year*



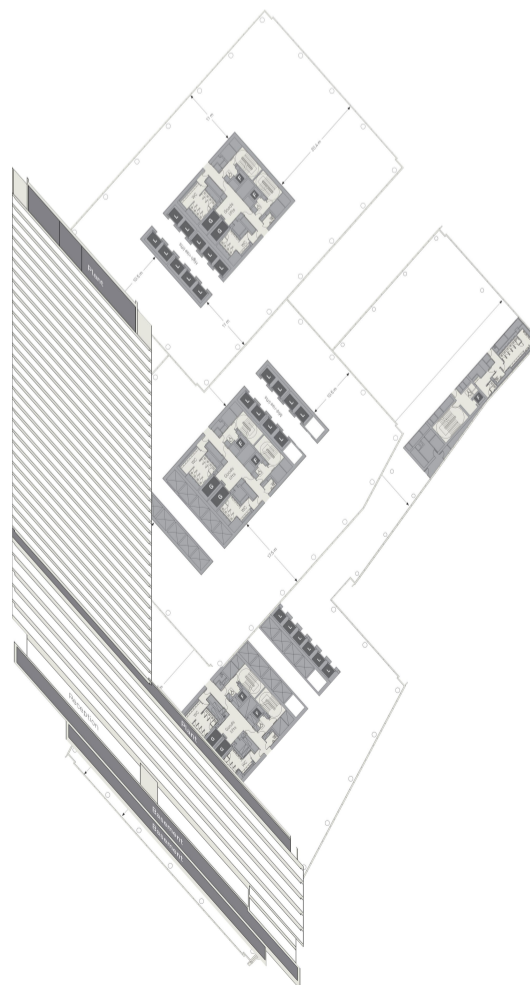
*Designed by Allies & Morrison and Woods Bagot  
Structural Engineering by Robert Bird Group  
Currently under construction, since 2011*

**Material: Glass**

*Energy efficient glazing maximising light penetration and views,  
with integrated 'solar control glass' on the East and Western elevations to reduce heat loss*



*Applied to the entire façade (right), the glass has been structurally engineered especially to allow light to filter through and into the building. Each pane is a modular unit, which makes installation process fairly easy. The use of glass façades is fairly typical of the archetypal office block, and has been proliferated for buildings of this nature since the early 20th Century.*



*Glass is what's known as a Vitre solid, and is formed by a process termed 'rapid melt quenching.' More often than not, 'glass' is attributed to any variant of amorphous solid that shows a glass-like transition at the temperatures required for rapid melt quenching. This likelihood of a material to form glass is known as 'glass forming ability.'*

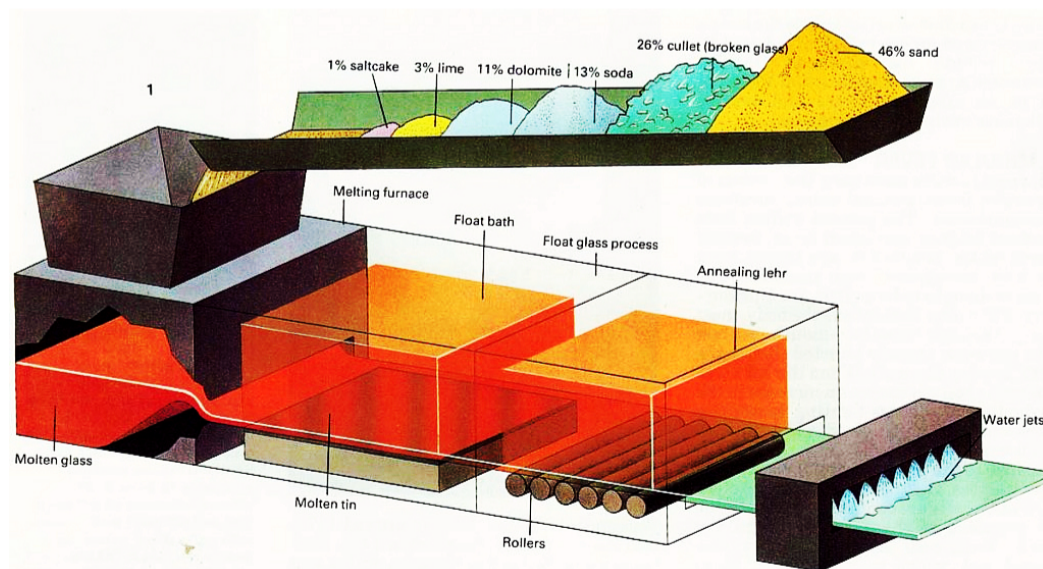


*Glass, being amorphorous, displays the mechanical properties of a solid, despite having an atomic structure more closely related to a 'supercooled liquid.' As a result, despite being able to be employed mechanically, it resolves a tendency to exhibit 'liquid qualities,' albeit as extremely viscous material. Contrary to popular belief below its freezing point – below the point underwhich it experiences supercooling – glass does not 'flow' as such, despite exhibiting a viscosity of  $10^{17}$  -  $10^{18}$  Pa s at room temperature.*



*From an architectural point of view, glass has a widespread application because it doesn't contain internal subdivisions, structurally, that are found in polycrystalline materials, meaning it allows visible light through without diffracting it obscurely. Glass retains the ability to refract, reflect, and transmit light without necessarily scattering it, which renders it largely suitable for uses such as windows.*

*The most common glass manufactured today, for architectural use, is known as 'float glass'. It was developed by Sir Alastair Pilkington in the 1950's.*



*It is made by 'floating molten glass on a bed of molten metal, typically tin, although various low melting point alloys were used in the past. This method gives the sheet uniform thickness and very flat surfaces.'*