

# Ben Young: The Water Architect

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## Glass Water

Some say glass is a liquid. Although scientifically, at room temperature, this is a myth, it still might be intuitive to think of glass this way. This is especially true when it comes to clear blue glass. Glass can mimic the natural transparency of still water quite well. Even the fleckstarn light patterns generated by water in motion can be duplicated with warped or angle cut glass. In addition to this, tinting the glass with various colorants to simulate the clear yet cerulean tone of water only further pushes the resemblance. One artist decided to take advantage of this similarity in a unique and tasteful way.

To model the oceans and lakes and their contrasting natures with rocks, cliffs, and barriers is his mission. This artist first imagines a scenic view in his mind, then transfers it to paper. Calculations are done by hand, and so is the cement sculpting and glass cutting. Last the pieces are fit together with various adhesives and finished with rare but characteristic insertions like trees, boats, or explorers. The result is a solid diorama of the interface between a clear blue body of water and a somewhat porous and stone greyish-white foundation. Figure 1 displays a prime example of this kind of artwork. The masterpiece seems like the coast one would navigate when dreaming.



Figure 1 - "Daydream," 2020. A woman hangs over the water.<sup>1</sup>

## Ben Young

A native born Australian, now residing in Mount Maunganui, New Zealand, Ben young has been making glass sculptures for over fifteen years. All his work is hand cut without the aid of computers or complex technologies. His time in nature is integral to his work. He can be found surfing the ocean when not in the studio. His periodic insertion of characters, huts, and boats allow for a sense of perspective and scale. The worlds he has built seem colossal, surrounding each individual steel or bronze viewpoint in an abyss of concrete and glass. One can simply be lost in this work.

## Clear Blue Float Glass

The kind of glass utilized to replicate water in this case, is soda lime flat / plate / float glass that has been annealed to prevent shattering. Soda lime glass is composed primarily of silica ( $\text{SiO}_2$ ) and other elements like sodium, calcium, magnesium, aluminum, potassium, titanium, and sulfur. Cobalt, selenium, and nickel are often used as colorants.<sup>2</sup> Float glass is a kind of mass produced glass originally developed by Sir Alastair Pilkington in 1959. This process involves a large storage container of high temperature liquid glass poured continuously onto a surface of molten tin and stretched out by side rollers to determine thickness. The ribbon of glass is then cut into proper dimensions and warped into desired shapes. Then, the glass is annealed to relieve internal stresses.<sup>3</sup> Figure 2 conveys the plate-like geometry of float glass. Although the artist's water looks continuous and full of depth, it is actually the combination of multiple panes layered one after the other. The transparency generates an illusion of a bulk or body of water.

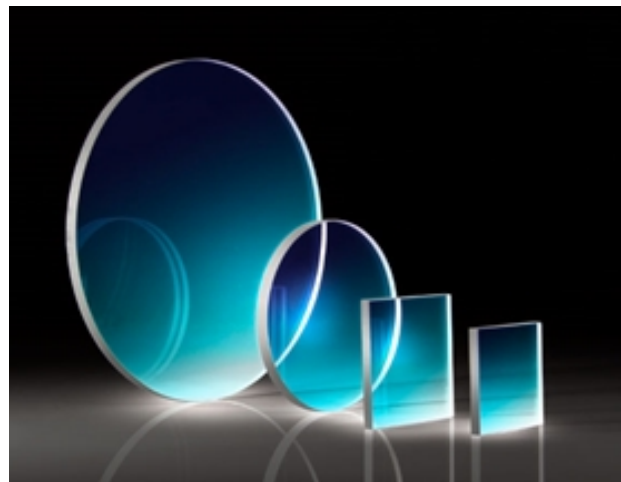


Figure 2 - Above are various geometries of flat / plate / float glass cut from a singular fabricated ribbon.<sup>3</sup>

The transparency of a material can be attributed to the way light interacts with a material's electrons. In an ionic environment, the electrons are relatively locked. Incoming photons cannot interact well with locked electrons, so they pass right through the material. Pure silicon dioxide forms a robust crystal, which is perfectly clear glass. All the photons pass through. It is the addition and concentration of impurities that give this material its hazy color. These metallic impurities allow for the movement or energy elevation of electrons, and therefore the absorption of photons. Cobalt impurities absorb photons with higher wavelengths (red and orange) due to its unique electron band structure. Therefore, blue and green light are left to pass through, producing the ocean water like color.<sup>4</sup> Figure 3 exhibits the blue tint of this particular float glass art piece.



Figure 3 - "Solitary Catch Awaits," 2020. The blue and green color of the glass is highlighted, especially along the water floor where shadows and depth emerge.<sup>1</sup>

### Laminated & Layered Glass Assembly

As demonstrated by Figure 4, the primary purpose of the glass is to simulate water. The layered nature can better be seen when viewing from the proper angle. Figure 5 emphasizes this while uniquely portraying rough waters, rather than a still atmosphere. Each window pane, within each piece, is cut with remarkable detail and precision. The pane has to fit every crevasse just right, all the while maintaining coherency with its neighboring windows. The plates are held together by a transparent adhesive, allowing for a smooth visual internal appearance. Overall, the idea is brilliant and founded upon a simple base of concrete that reinforces the serene atmosphere in each piece, no matter how rough the waters turn out to be. Ben Young's work has been featured alongside many well known glass artists in New Zealand and internationally. He has also successfully sold out solo shows in New York, Auckland, and Singapore.<sup>1</sup> Last, he is consistently producing new art pieces, especially in recent years. It is safe to say his glass sculptures have taken New Zealand, and the rest of the world, by storm.



Figure 4 - "The Navigator," 2020. This piece captures just how dramatically the sense of scale can be altered by simply replacing a tiny metal figurine with a ship, rather than a singular person.<sup>1</sup>



Figure 5 - "Contemplation," 2016. The laminated layered nature of glass water in motion can be seen clearly from this work.<sup>1</sup>

### References

1. Ben Young, "Selected Works 2013-2021," *Broken Liquid*. <https://www.brokenliquid.com/selectedworks> [Online Accessed: November 30, 2021].
2. R. Synowicki, B. Johs, A. Martin, "Optical properties of soda-lime float glass from spectroscopic ellipsometry," *Thin Solid Films*. Volume 519, Issue 9, Pages 2907-2913, 2011.
3. M. Achintha, "Float Glass Process," *Sustainability of Construction Materials*, Materials Processing. 2016.
4. H. Nagao, M. Misonou, H. Kawahara, "Mechanism of coloration in copper-stained float glass," *Journal of Non-Crystalline Solids*. Volume 120, Issues 1-3, Pages 199-206, 1990.