



Trimbloid X

By Keith Bouchard, E.I.T.

If you have ever walked, run, biked, roller-bladed, or spent any time at all on Boston's Charles River Esplanade, it's likely you have come across the sculpture Trimbloid X. The sculpture, which was created by the late artist David Kibbey in the early 1970s, has had a prominent position in Boston's signature park for a number of years. Trimbloid X is a three-dimensional X-shape standing 10 feet tall and fabricated from Cor-Ten Steel™ sheets that were bent and welded together. The sculpture's three "legs" and three "arms" are all welded together at a horizontal plane of symmetry at mid-height of the object to create its unique geometry. As was common for sculptures at the time, the artist chose Cor-Ten Steel for its distinctive red patina and its corrosion resistant characteristic that would presumably allow the sculpture to be displayed outdoors for many years to come.

However, as has become well understood in the years following the creation of Trimbloid X, Cor-Ten Steel and its weathering steel successors are not as resistant to corrosion as the industry initially claimed. It is true that, if exposed to intermittent wetting and drying cycles, Cor-Ten Steel will form a protective red patina that will prevent further corrosion of the underlying steel. Unfortunately, in cases of ponding water or constant moisture, the protective patina will not form and the steel will be susceptible to continuous oxidation until eventually the full section dissolves. There is no better example of this regrettable fact than Trimbloid X.

The natural shape of Trimbloid X funnels water to the center of the sculpture, where no means are provided to whisk it away. The standing water eventually ate through the center of the object, allowing moisture and organic matter into the hollow "legs" and accelerating deterioration. Add years of delayed maintenance and the result is what you'll see if you stroll down the Esplanade today – gaping holes in the side of the sculpture, trails of corrosion down the legs, and protective fencing to keep the public away from its sharp, rusty edges.

This is the condition that CBI Consulting Inc. (CBI) found the sculpture in when engaged by the Massachusetts Department of Conservation and Recreation (DCR) to assess the condition of the sculpture and provide repair schemes and estimates. The Massachusetts DCR has a very limited budget for the repair of the object, so CBI explored a variety of different options to re-establish its structural integrity while respecting the original artistic intent. These include reinforcing the sculpture in the field, shop-repairing the object with new weathering steel and possibly painting with a weather-resistive coating, and "skinning" the object with new weathering steel sheets. Each of these options has pros and cons with regards to ease of construction and respect to the sculpture, as well as cost.

Through consultation with steel fabricators and the Massachusetts DCR, CBI recommended that the object be disassembled and repaired in the shop with new weathering steel patches. Coating the sculpture with a patina-colored paint was not recommended, as there was concern that it would interfere too much with the "industrial" look of the original sculpture. The existing patina on salvaged parts of the sculpture to remain will need to be sand-blasted off to attempt to match the



Above: Trimbloid X on Boston's Esplanade.



Right: Corroded Steel at the Center of the Sculpture.

new steel. The owner was warned that, even with this measure, there is no guarantee that the original steel will closely resemble the repair steel. As one steel supplier noted, different batches of weathering steel are like "trees in a forest: they all basically look the same but no two are alike." However, with the severe level of deterioration present on the object and the limited budget, this is likely the best the owner can do short of completely re-sculpting the piece. ■

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