

## Bones

The creation of a garden can be the lifelong endeavor of a single individual or a large scale project involving many dozens of people. Global Flora, essentially a garden in a newly constructed building, has most definitely involved dozens; skilled construction professionals, architects, landscape architects, geologists, botanists and horticulturists. By February, we began to turn a corner and the project began to shift toward garden building rather than building building.

The idea that a garden has “bones” around which the plantings are established seems to date to the early 1900s. Architect Edwin Lutyens, in collaboration with legendary garden designer Gertrude Jekyll, created iconic English homes and landscapes, transforming how generations would design buildings and gardens.

In 1908 Lutyens worked on a design with Jekyll at Gledstone and wrote of the need “for a garden scheme to have a back-bone, a central idea, beautifully phrased”. Since that time “the bones of the garden” has come into general usage and implies the infrastructure and hardscape but may also mean larger trees and shrubs.

The Global Flora conservatory will be a garden enclosed within a structure but the plantings will



Setting the first bone in the Wet Biome

intersect with “the bones” just as an outside garden would. Large stones will be a feature, and outcrops and cliff faces will be constructed of western Massachusetts stone and also one particular and rare “stone” from the Gilboa Forest of New York.

The iconic deserts of the American southwest feature red rock, and this was a color we felt would look best in the Arid Biome, giving a feel of a parched landscape. We spent quite a bit of time tracking down a source of brownstone, the ubiquitous building material of New York City and Boston, which often has a reddish

tinge. What many people don’t realize is that New England quarries, in Portland CT and East Longmeadow, MA, supplied all the brownstone that built these metropolises. During a 300-year period from the 1600’s to the early 1900’s, thousands of quarrymen, often new immigrants from Italy, Ireland, Sweden and Finland, worked these two sites.

Not a single brownstone quarry is still in operation so sourcing this stone took some leg-work in both Portland and East Longmeadow. One tip brought me to an owner of

an old quarry (“I sold all the stone I had last year”), who related that the sidewall of his quarry had the word “Death” chiseled into it, a pre-OSHA warning to any new employees. In East Longmeadow, I eventually found Tom O’Brien who had accumulated an ample supply, hoping to one day construct a brownstone barn. He generously sold us a load to construct a rockscape for our Arid Biome. Just as we like plants with an educational story, our heavier bones have interesting tales to tell, a part of the forgotten history of New England.

For the Wet Biome we had the luxury of working with an actual quarry, Ashfield Stone, of Shelburne Falls, MA, who mine a particular western Massachusetts vein and produce tile, countertops and architectural panels from the boulders they mill into product with



Staging the Ashfield stone outside of Global Flora

their diamond tipped saw blades.

A selection of 27 boulders was made by the landscape architects, Todd Montgomery and Martha Eberle from Andropogon Associates, and on February 11<sup>th</sup>, the first of these was set into place in Global Flora. It felt like a turning point in the construction, our first “bone.” Some of these pieces weighed two tons and were nine feet long so maneuvering them into place relied on the considerable skills of the heavy machine operators of the Dow Co.

The final set of stones have botanical stories to tell, not of centuries past, but of plants that lived hundreds of millions of years ago. In the 1920s a water project for New York City was begun in Schoharie County, southwest of Albany. It uncovered a set of fossils, an amazing find of the world earliest forest, from the Devonian period, some 380 million

years ago. Construction crews found a forest of fossil tree stumps, and Wellesley acquired one of these sandstone cast trunks at some point. The fossilized trunk section is thought to be the genus *Eospermatopteris* belonging to the Cladoxylopsida class.

It has been a featured display in the Focus area of the Science Center for decades but

will soon be part of Global Flora. Cladoxylopsids had a tree-fern like appearance but predate ferns and are intermediate between the earliest vascular plants (not tree-like) and ferns as we know them today. We plan to plant the oldest extant families of plants around this 400 million year old treasure. Remarkable fossils are still being pulled from this area of New York.

The smallest set of “bones”, more a display than a feature, are some plant fossils my brother and I pulled from the downstream sedimentary rock outcrops below the dam in Holyoke, Massachusetts. These were identified by Columbia University paleontologist Paul Olsen as *Pagiophyllum*, with an age of 190-200 million years. This genus is no longer found but its plant family, the Araucariaceae, is still part of the world’s flora, though found only in the southern hemisphere, far from New England. I have seen members of this family during plant explorations in the Philippines and Chile and Global Flora has three genera of the Araucariaceae; *Wollemia*, *Araucaria* and *Agathis*, ready to complement their long lost sister.

A garden is made incrementally, piece by piece, plant by plant. It is something humans have done for thousands of years and it is a special honor for us to be part of that long tradition.

by Rob Nicholson, Botanical Collections Manager