

The Back Bay:

Winning the Battle, Losing the Water



The Charlesgate

Traveling west on Beacon Street, just crossing Massachusetts Avenue, one will find that suddenly the street is not quite as well drained. Water pools at corners of intersections, blocking pedestrians from crossing. The gutters fill up almost to the height of the sidewalk. The next day the water is still there and it does not look like it is moving one bit. This is the Back Bay Fens of today. It is an area of Boston filled with beautiful residences, nice restaurants, a few fraternities, and yet upon closer inspection, an area that seems to always be at odds with the water in and around it. Evidence in and around the Back Bay provide information about its present, past, and future conflicts with water.

Further down Beacon Street, there comes an abrupt end when the street meets up with the Fens itself. This is probably the most important piece of the puzzle, the Charlesgate. At that point, all of the water from the rest of the Fens meets the Charles River. It can provide beautiful and refreshing contrast to the scenery of the city when properly maintained. Of course, it has not been properly maintained and is currently in the process of being dredged up. So it provides more of a dirty construction site feel to the area. Even without the current dredging, it fails to add much to the area as the small park area around it is filled with bizarre looking benches that have not been sat on in years, and street lamps that have not been lit in just as long. Much of the storm sewer runoff also merges near this point. Because of this, when the Fens is particularly full, or there has been a large amount of rain or snow melt, the storm sewers do not empty out and, in extreme cases, the Fens can backup into the storm sewer. Thus, the Charlesgate region of the Fens sets the stage for the entire Back Bay, and does it poorly.



Parking lot with extra drain, showing massive water damage to asphalt.

The problem of drainage is felt throughout the Back Bay. Because much of the area is sloped toward the Charles, sites on the north end of the Back Bay receive far more water after storms. The parking lot shown provides a good example of this. It lies on the far north end of the Back Bay and thus receives a disproportionate amount of runoff. So much more water flows there than was expected by the builders that they had to put in a second drain at the low point of the lot. This particular lot also shows evidence of damage to the asphalt due to water. When drainage is insufficient, water pools around the drains. Some of it gets into the asphalt, then freezes, cracking the surface of the lot. The process then repeats over time, making cracks larger and potholes deeper. The builders in this case forgot to take into account not just the amount of rain that will fall on this area, but the water that naturally flows to the area as well. Similar situations are seen throughout the Back Bay, contributing to the decline of the street and alley surfaces of the area. In the case shown at left, the drainage was properly planned for when the building was first constructed, but when the storm sewer system changed years later, it was plugged and never replaced. The result is a low-lying area in an alley that fills to about 6-inches of water whenever it rains. An example of the fact that even good planning in the past cannot make up for poor planning in the present.

The problems in the area are not confined to drainage nuisances though. Because the water level in the ground fluctuates to high levels on a consistent basis, the soil



Covered up drain. Water now just pools.

on which everything is built tends to settle over time. Walking through the Back Bay, one will notice many cases in which the bricks of a sidewalk have sunk below the level of the cement nearby. As harmless as sinking sidewalks are, it can present far worse problems when an area beneath a building settles unevenly. In the relatively rare cases of this that are visible, cracks develop on the sides of buildings and their structural stability is sometimes brought into question.

All of the problems and annoyances found in the Back Bay are the consequence of what seems to be the current prevailing strategy for development in the area; to confine, control, and otherwise block the natural flow of water in the region. More specifically, the major problem lies in the fact that each successive failure has been solved by adding another layer of control onto the system. Eventually with such a strategy, there are so many layers of problems, solutions, and solutions to solutions, that it becomes impossible to identify the true cause of a problem and thereby impossible to implement a working fix. And yet, fixes continue to be added onto the pile. The reason for this is that any time there is a problem, in the Back Bay or anywhere else for that matter, complaints go to recently elected public officials who do not know the history of the problems and just propose a new fix (which in many cases is not so new after all). To truly get a feel for where the inadequacies of the Back Bay come from, one must look to the past.

For thousands of years, the Back Bay was, as the name would imply, a bay. Water traveled freely over the land that later became Massachusetts. Unopposed and uncontained, the water cut paths through the land, letting water flow from the inland to the sea. Two creeks flowed from the north-west, bringing in water from snow and rain. The two creeks merged at one point and created a delta that put forth their collective water into a larger body that connected to the ocean. The peninsula on this larger body of water became Boston, and was soon ruled too small by the city. On the area where that delta emptied out, now called the Back Bay, large dams were placed, criss-crossing the water in a large squashed “X” pattern to control the tides and use them for mill power. Before long though, the water refused to do more work; the tides were stopped. Because of the seeming lack of power in the water and because of the greater need for residential land at the time, the city of Boston decided to fill the large bay. The plan was simple; the city needed land, the bay was filled with water, therefore the city would fill the bay with land.

At first, the filling of the Back Bay seemed like it was not going to be a very complicated task. The city had already filled a few other, slightly smaller places, like the old Mill Pond. With the recent advent of the railroad, huge amounts of dirt were able to be transported and, with the help of the newly invented steam shovel, deposited on the site quickly. What they failed to take into account though was the natural history of the area. At the time, city planners saw all bodies of water as equals. They must have seen that there had been tides and major flow differences in this particular area, but most likely figured that enough dirt would solve any problems of this sort. Previously completed filling projects had never involved an area that naturally had water running into it. All of the other filling projects had been bays that were nothing more than a small dent in the peninsula. The city filled for almost 40 years (1), but about 10 years into the project, the problems began. Homes that had already been built on the filled land were having problems with flooding. Those creeks that used to flow into the area had not taken kindly to the filling of the bay. Original plans for the project, as seen on maps from the period, show no considerations for the flow of the water downstream. The two creeks, now small rivers by the names of Muddy River and Stony Brook, now also carried with them the waste from towns upstream. Boston planners began producing ideas to control the incoming flow of water. Plans from the time show large basins that were to hold extra water when needed and direct it into the Charles. The most popular plan looked similar to an enormous swimming pool

spilling over into the river.

Luckily, Frederick Law Olmstead came up with a far more original and innovative plan. In his approach, the water was not forced, it was worked with. He would create marshes and ponds that the water could flow through, and an outlet at the end (the Charlesgate) that would empty into the river. Olmstead saw the water as a tool that could be worked with to shape a more livable city while at the same time creating a beautiful environment. His vision of the area became the Fens in 1895 (3). The Fens was able to do everything needed of it, and more. It took in the water from Muddy River and Stony Brook, along with runoff from the sewer system of the area.

The project was a success, for a time. The land that was produced was well used and populated very quickly. In maps and sketches showing the land during the filling, houses can be seen being built right as each new plot of land is filled in. The Back Bay became a triumph of 19th century urban planning. It was an amazingly well done process; the only problem was the water. As the population of Boston, the Back Bay, and the surrounding towns grew, the amount of excess water and waste trying to make its way down through the Fens grew as well. Soon it was too much and there was flooding again. Over the years since, there have been many small projects to help correct for floods, but none have properly dealt with the problem. The goal of each project has simply been to stop water, not actually use it.

The current plan is a project that was recently begun and holds tremendous promise for the future of the area. The Muddy River Project (4) was created in 2002 to address problems with flooding and general lack of upkeep on the entire Muddy River and Fens area. Dredging was done throughout 2002 and continues into 2003. Signs can be seen along the river showing maps of the project and information about what the planners have in store for the area. One of the more important parts of the project is the Charlesgate dredging phase. In this phase of the project, the entire area leading up to and within the Charlesgate is completely renovated. The dredging process itself at the Charlesgate is currently underway and can be seen working almost every day. Unlike previous plans which merely widened the waterway or cleaned up garbage, the Muddy River Project plans to improve every aspect of the urban environment. After the dredging and cleanup, the old benches, walks, and lights will be removed and replaced with some actually useful park areas. Next there will be a 2 year landscape maintenance period while the project planners find out from the public what kind of amenities they want built. It is impossible to tell what sort of unforeseen effects this project may have on the Back Bay area, but the forecast in general looks good. Already, improvements in drainage and a general lack of flooding can be observed in the area. The site is not particularly pleasing to the eyes at the moment, but the projected vision has a great deal of potential for beauty and elegance; only time will tell.

All of the problems in the Back Bay have come from a failure to work alongside nature. Very few urban planners have taken the natural tendencies of the Back Bay into consideration when planning changes. Those few that did, like Olmstead, have made lasting impacts positive impacts on the area. The past has had many poor planning attempts which have sent ripples of problems into the present, but the future holds promise. There is a growing acknowledgement in urban design that nature really does matter. Architectural awards are going more often now to designs that view nature as a tool and a resource rather than an enemy to be conquered. An interesting example of this kind of thinking, in an area with some similarities to the Back Bay, is the Zhongshan Shipyard Park in Zhongshan City, China. Kongjian Yu, the landscape architect for the project, created an amazing fusion of natural and man-made elements in the park which is having a lasting



Charlesgate Dredging Information Sign

impact on the city. If planners working on the Back Bay pay attention to forward thinking concepts in design like those seen in Zhongshan, there could be a beautiful future for the area. The Muddy River Project is a good start, but it will still be tempting to repeat old mistakes tried in the past. If the Back Bay is not planned for and maintained with a conscious effort to take nature, especially the force of water, into account, then it is doomed to succumb to the same problems time and time again into the foreseeable future.

Works Cited

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