

SUSTAINABLE REDEVELOPMENT IN A FLOODPLAIN - CINCINNATI, OHIO



Flooding regularly destroys lives and the built environment. Climate change and the associated unpredictable weather have further exacerbated the situation. Fortunately an increasingly sophisticated understanding of the situation has led to the development of resilient strategies to lessen the environmental, human and financial costs of these events and reduce the dependence on costly flood defense systems.

Because it comprises a flood plain, until relatively recently Cincinnati's Central Riverfront land uses had been a flood-proof stadium surrounded by surface parking and low value warehousing, not very attractive or very productive in terms of employment, culture, or recreation. Why is the situation different now? How did the master plan drafted in 1997 make a difference? Research has suggested five factors: **Establishment of a three-dimensional master plan based on flood resilience, not resistance; Dramatically reconstructing public infrastructure, re-establishing the link between the riverfront and the Central Business District; Creating air lots above the 500 year flood elevation; Creating a spectacular new public riverfront park; Maintaining a strong commitment to sustainable construction standards.**

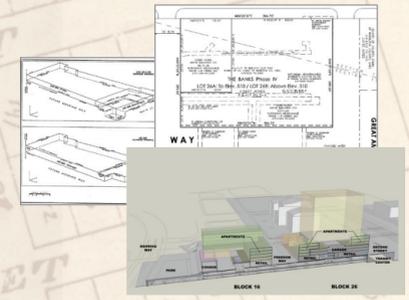
Even through the economic uncertainty of the past five years, the first phase has been a financial success with 300 apartments fully rented and 92% of the commercial space leased. The American Planning Association awarded the entire project its 2013 National Award of Excellence for Plan Implementation, including the two new professional sports stadia that bookend the project.



1. Establishment of a three-dimensional master plan based on flood resilience, not resistance. The plan has controlled both the horizontal layout and vertical elevations for public infrastructure, parkland and the private development, the keys to a comprehensive solution for delivering a successful program of development above the 500 year flood plain while respecting the river's need to flood.



2. Dramatically reconstructing public infrastructure. This work included lowering the riverfront freeway (Fort Washington Way) into a trench, constructing a combined sewer overflow storage tunnel for the 110 acres of downtown north of the freeway, and extending the central business district streetgrid over the freeway trench above the 500 year flood event and into the riverfront on top of a floodable intermodal transit and parking structure at that same elevation. This work satisfied flood plain construction regulations by providing resilient flood defense for the proposed development and street infrastructure, not an expensive flood wall that would have cut the riverfront off from the river.



3. Creating air lots and streets above the 500 year flood elevation. With a unique property concept tied to the master plan, the public parties split the entire project area into layers. Ground lots have remained in public ownership for the garage, street right-of-ways, or park; then, supported by the parking structure, air lots owned by the developer created above the 500 year flood elevation are served by streets at the same elevation. Those legal and physical structures created a comprehensive approach to property ownership and responsible, sustainable development tied to flood plain management. It solved the problem of safely constructing buildings and streets in the flood plain. Air lots avoided a hodgepodge of individual aerial easements or buildings on stilts. It also allowed carving out a private, taxable parcel in the park for the Moerlein Lager House.



4. Creating a spectacular new public riverfront park. The City designed the park with the inevitable flooding in mind. In doing so, they enhance the site, provided a major fully public amenity, helped obtain private donations while protecting the riverbank from erosion. The operation of park's many fountains, gardens, lawns, and bike center are supported by a yearly payment by the developer and a percentage of the profits of the Moerlein Lager House.



5. Maintaining a strong commitment to sustainable construction standards. This project returned an urban greyfield to productive use, enhancing the quality of life for all of Cincinnati's citizens. It contains multiple LEED certified mixed use buildings atop the floodable garages with another building under construction in early 2014. The park owned structures have geothermal heating and cooling systems for the Riverfront Bike Center and to the Moerlein Lager House all of its HVAC and beer brewing energy needs.

