

City of Santa Monica Urban Watershed Management Program

Low Impact Development Strategies:

Big Blue Bus Facility

612 Colorado Avenue



← [Infiltration Zone, Phase I]



← [Contech Con/Span®]

[Contech StormFilter®] →



[Infiltration Zone, Phase II] →



The **Big Blue Bus** (BBB) depot is a city-owned transportation facility providing maintenance and storage infrastructure for the bus fleet serving Santa Monica and the surrounding City of Los Angeles. In 2009, the BBB completed the construction of a vehicle wash facility, a maintenance facility and the re-surfacing of a large bus parking area.

The upgrades incorporated Low Impact Development strategies with Best Management Practices (BMPs) to harvest onsite stormwater for proprietary treatment and infiltration. The 6.5-acre site is nearly 100% impermeable – roofs and parking areas with small patches of landscaping. Fortunately, the site was large and open enough to allow for some notable sub-surface treatment and infiltration devices - three separate, large infiltration zones were incorporated into the site in order to capture runoff from roofs and surface parking areas. The projects were built in two phases over several years of construction.

The first phase (Phase I) consists of an infiltration zone made up of concave plastic chambers, called **Infiltrators**®, backfilled with rock (PHOTO top left). This system holds up to 25,000 gallons of rainwater runoff for infiltration.

The second phase (Phase II) consists of two identical systems intended to handle runoff from the bus parking and nearby roof areas; the systems are designed to hold up to 160,000 gallons of the projected runoff from a 3/4 to 1 inch rain event. Further, the Phase II systems were designed to remove the trash, sediment, heavy metals, and oil and grease anticipated from the parking area runoff (the filtering and treatment measures are intended to protect against concentrations of toxic substances building up in the infiltration pit and adjacent soils over time). The runoff entering the Phase II systems passes through four stages: first, the water flows through a vortex-type pre-screening **Contech StormGate**® (not pictured) to remove trash, sediment and debris; secondly it enters into a **Contech StormFilter**® (PHOTO bottom left) to remove soluble pollutants like oil, grease, organic compounds, and heavy metals; and then into the **Contech Con/Span**® vault (PHOTO top right) where the water is held for a short period allowing additional sediments to settle out; finally, the water flows to the rock-filled infiltration zone (PHOTO bottom right) where it will eventually recharge the groundwater.



Planning for a Cleaner Bay

Urban runoff flowing through storm drains is the single greatest source of pollution to the beaches and near shore waters of the Santa Monica Bay. Unlike sewage and discharges from industrial sources, urban runoff is not generally adequately treated before it reaches the bay and our beaches.

The City of Santa Monica passed an ordinance that is designed to reduce the amount of urban runoff pollution that reaches our storm drain system and the Santa Monica Bay. The ordinance requires a reduction in urban runoff flowing off of all impermeable surfaces from newly developed or retrofitted parcels within the city.

Reducing the amounts of urban runoff and of pollutants contained in the runoff is essential for the health and safety of our community. A cleaner bay means a healthier marine ecosystem and improved quality of life for residents, and increases Santa Monica's appeal to visitors and businesses.

By implementing post-construction Best Management Practices (BMPs) and making these strategies part of our daily lives, we can make a genuine difference - and clean the bay!



Putting the LID on Urban Runoff, the Santa Monica Way

In the city's efforts to reduce runoff pollution through the use of BMPs, we can manage, use and redevelop our lands in a more sustainable manner through the use of Low Impact Development (LID) and smart growth design strategies, and BMPs. LID is an economically and environmentally responsible strategy to site development which still allows land development, but in a long-term cost-saving manner that also mitigates potential environmental impacts. Whether employed at a single-family home or large commercial or public project, LID integrates land planning, and site design practices and techniques to mitigate development impacts to land, water and air, to conserve and protect natural resources and ecosystems, and to reduce infrastructure costs, e.g., storm drain systems.

This strategy views each development project as a small micro-watershed, part of the greater watershed or drainage basin of a particular area. The strategy promotes the concept of "start at the source," that is, to keep as much precipitation on each parcel to minimize the amount of runoff or waste water leaving a site. In the end, watershed management must include the individual and each parcel, and LID approaches should be used in planning and designing phases. The results of these strategies will be to maximize onsite rainwater and runoff harvesting, retention and use, and to minimize runoff pollution in reaching the bay.

For more information contact **310-458-8223** or visit www.sustainablesm.org/runoff



Urban Runoff & Watershed Management Program

City of Santa Monica Office of Sustainability and the Environment
200 Santa Monica Pier, Santa Monica, California 90401

Printed on recycled paper with vegetable based inks.

