

Enviroquip MBR System Helps OHSU Go Platinum

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The City of Portland, Oregon is an extremely progressive city in terms of environmental quality. With that in mind, City planners teamed up with Portland's largest employer, the Oregon Health and Science University, and two development companies to build a dense urban green neighborhood. This neighborhood includes retail, housing, green spaces, and the OHSU expansion. One of the first new buildings in this development is the River Campus One Building (OHSU Expansion). The OHSU building is a mixed-use facility that houses commercial office space, a wellness center, medical research, out-patient surgery, and ground floor retail.¹ Please see Figure 1 for an artist's rendering of the OHSU building.

Figure 1. OHSU Building²



This 400,000 ft², 16-story building cost \$145 Million to build and was completed in the fall of 2006. Despite being a green building, the project team believes it was built on a conventional construction budget.¹ Among many energy and water conservation programs, the OHSU building recycles 100% of the wastewater generated. It is reused for in-building toilet flushing, cooling tower water, and landscape irrigation. The OHSU building uses approximately 60% less potable water than a similar conventional building with the help of the Enviroquip MBR System.² Effluent not reused can be discharged directly to the Lower Willamette River because of the Level IV reuse water produced by the MBR System. The OHSU River Campus One building has achieved LEED Platinum status. To date, it is the largest LEED Platinum certified building in the US. The Enviroquip MBR System was selected as the technology-of-choice because of its superior effluent quality, small footprint, ease-of-operation, expandability, low odors, low sludge production, and low cost of ownership. This MBR System contributed three (3) points towards the building's Platinum status.

Figure 2. Kubota Membranes



To reduce upfront capital costs, the project team only purchased membrane capacity for Phase 1 of the buildout (15,000 gpd). The building filled up quicker than expected, so the remainder of the membranes were purchased and made operational by the end of September 2007. The Enviroquip MBR System uses the Kubota flat-plate membranes for filtration. At this facility, the membranes are installed in the ground floor of the parking garage and covered by heavy duty metal covers. Please see Figure 2. Before the expansion, the plant regularly handled flows in excess of design. According to Ken Johannes, the plant operator, *"Inflows from the building are higher than was originally modeled, with weekday average daily flows at currently about 165% of plan . . . The two MBR's have performed outstanding . . ."*

¹ "OHSU's First South Waterfront Building On Track To Be One of World's Greenest" OHSU Press Release, 2/16/06.

www.ohsu.edu/ohsuedu/newspub/releases/021606greenest.cfm

² "Center for Health & Healing, One of World's Greenest Buildings", OHSU SOM News, 2/06. www.ohsu.edu/academic/som/email/feb2006_update.html