

Stewardship Practice at Dharma Rain Zen Center

The purpose of this report is to document the history and current status of property development by Dharma Rain Zen Center, at 8500 NE Siskiyou, in Portland, Oregon, with a particular focus on environmental stewardship.

Why is the issue of stewardship important?

In conjunction with the first shovel being placed into the soil and the initiation of property development at the current site, Dharma Rain held a ground-breaking ceremony. Many people attended, both from within and outside the sangha including officials from the State of Oregon, Metro Regional Government, and Portland Public Schools. With the abbots assisting, a Native American elder conducted a ceremony in which the spirits of the land were invoked and requested to allow Dharma Rain to come into right relationship with them. This ceremony provided a clear indication of the deepest intentions for this development: to demonstrate the fruits of our Zen practice and thereby heal the wounds of environmental degradation and simultaneously join all parts of the community to heal the damage of cultural disruption.

Moving to, developing, and living on the Siskiyou property represents an opportunity to manifest the Dharma in a tangible and practical way. Development of the temple on this land has served to expand the mission of Dharma Rain in a way that has been implicit but only occasionally explicitly expressed. Dharma Rain's mission is to "Transmit the teachings and practice of Soto Zen Buddhism by cultivating compassion, love and wisdom." These are transmitted to the sangha of committed practitioners as well as the larger community of all sentient beings, which is facing an environmental and social crisis. Many people recognize that the magnitude of this crisis requires a significant shift in our lifestyle and value system to incorporate deep care and concern for the earth and its inhabitants. A key element of Buddhist practice at Dharma Rain focuses on meeting circumstances in the world with wisdom and compassion. As Dharma Rain faces the current circumstance, our institutional practice and decision making is part of our teaching. How can we use this site to contribute to promotion of ecological and social healing and awareness, for the benefit of all beings?

The report provides an overview of property development to date, and goes into some detail on the history of land use for the development site, the associated challenges and opportunities, and a description of construction choices and current land stewardship practices that Dharma Rain has adopted to meet these challenges.

Overview of property development

Dharma Rain Zen Center is an urban Buddhist temple in Portland, Oregon. In the mid-1980s Dharma Rain was located in southeast Portland, eventually occupying several buildings in order to provide sufficient space for meditation practice, adult programs, residential training, and

Dharma School. As the sangha grew in size and complexity over the next several decades, it became apparent that more space was needed to provide the diverse array of offerings at Dharma Rain. The sangha approved a strategic plan in 2011 that proposed acquiring a larger facility in order to support the increasing number of participants and diversity of programs. After searching for six months and another year of extensive due diligence, the Board of Directors voted in November 2012 to purchase 14 acres in northeast Portland and began the process of building a temple.

Early in the due diligence and visioning process, the decision was made to devote one-third of the land area to the formal temple complex, one-third to cultivated open space including community gardens, orchard, buffers, and a public path, and one-third to native habitat, a mix of riparian forest and oak savanna habitat types. This is an example of leading with our values, and letting our overall mission guide the process of development. Two acres of the developable land area have been leased to an independent entity with the goal of building a cohousing community.

The temple complex follows a fairly traditional layout. Structures surround a formal garden on a north-south axis. Because funding to complete the entire complex is not yet acquired, construction is being implemented in phases. At the time of this publication (winter 2018), construction of the Sodo (meditation hall), workshop, and dormitories is complete, with the office and library housed in a temporary building.

History of site

The site is located at the interface between the Willamette River and Columbia Slough watersheds in northeast Portland, and was the site of extensive floodplain deposits at the foot of Rocky Butte. A gravel quarry owned by Rose City Sand and Gravel was located on the site for many years, mining the pit up to 80 feet in depth. Beginning in 1972 the site was converted to the H.G. LaVelle landfill. Over the next ten years the gravel pit was filled with construction debris including wood products, metals, and rubble, comprising approximately 2 million cubic yards of solid waste. Following closure in 1982, the landfill was covered with a clay cap. An active perimeter gas extraction and monitoring system is currently in place and operational to capture methane released from landfill debris.

Except for a brief period when it was occupied by a driving range, the site was essentially vacant and abandoned after the closing of the landfill in 1982. As a large and undeveloped area within the City of Portland, this site had long been of interest to city and regional planners, and was zoned for Employment use. Prior to purchase by Dharma Rain, previous use tended toward dumping, prostitution, drug use, and vandalism. Residential neighborhoods surround the site on three sides and there had been attendant concerns about safety and compatibility with neighbors. The proximity to NE 82nd Avenue, a major transportation corridor, further increases the visibility and impact of this development. Local neighborhood groups have been strongly motivated to support a positive and community-based use, blocking several previous attempts to develop the property because of livability concerns. The area surrounding Dharma Rain is economically distressed, ethnically diverse, and not particularly pedestrian friendly. Freeways

surround the neighborhood on several sides, with corresponding higher levels of pollution and noise. Even though several greenspaces are located nearby, including Rocky Butte, they are not easy to access and are historically underutilized.

Challenges for development associated with brownfield

The full range of construction activities at the site included the initial excavation and grading, utility installation, protection of the existing gas extraction system, methane mitigation, and building construction. The nature of the brownfield presented legal, administrative and physical challenges..

Methane

Soil-gas samples in one area of the site found concentrations of some concern for methane and hydrogen sulfide, which are commonly associated with landfills and can be explosive when not controlled. Vapor intrusion into buildings is the only exposure pathway of concern for soil-gas. To prevent this occurrence, building design incorporated specific features to facilitate adequate ventilation of the foundations: a raised floor with sufficient height above grade and numerous crawl space vents for the Sodo and the dormitories; a low-permeable membrane and passive sub-slab venting system underneath the workshop; location of the temporary building on supports above grade high enough to allow ventilation underneath. Additionally, excavation for utilities was limited to within the soil cap and utility trenches were associated with trench dams or backfill with compacted soil to avoid creating a preferential pathway for out-migration of methane from the soil via the trenches. The existing landfill gas extraction system was largely undisturbed during development. Only one extraction well was affected, and was lowered below grade and placed in a vault.

Cap improvement, settlement and contaminant removal

Protecting end-users from residual contamination of pollutants sequestered in the landfill was needed. Excavations into the contents of the fill were minimized and monitored. On-site soil samples were chemically analyzed for a suite of potential contaminants, such as lead, asbestos, and petroleum products, and the primary contaminants found were low levels of polyaromatic hydrocarbons (PAHs). In general, exposure pathways were found to be incomplete for these compounds so the soil was not considered a risk for human or ecological health. Any contaminated areas, such as a seep on the east edge, and an area near the center were excavated and the areas were lined, regraded with clean soil, and revegetated. All contamination, and all landfill debris unearthed in excavations was retained on-site and relocated if needed to one of two designated disposal locations. Clean fill soil was imported as needed to achieve the appropriate depth and grade for development and managed carefully to minimize generation of dust and erosive conditions.

Additionally, building sites were surcharged with approximately 10 feet of soil for at least 90 days in order to compress the soils. Following removal of the surcharge pile, a 4-foot thick pad was built out of 4 layers of compacted crushed rock and a structural geogrid. This further reduced the potential for settlement after construction.

Stormwater management

Ongoing management of stormwater was also required to prevent excess infiltration through the contents of the landfill, and potentially reaching the underlying groundwater aquifer. Stormwater refers to water originating as precipitation that pools on and flows from streets and other impervious surfaces such as parking lots, and thereby often contains many petroleum and metal contaminants derived from cars and other traffic. When purchased there was substantial evidence of erosion and ponding, and the existing stormwater system was ineffectual.

Management of stormwater at Dharma Rain involves the collection and filtration of runoff so that it infiltrates into the soil outside the boundary of the landfill. A series of filtration swales and retention ponds capture stormwater, which is then routed toward the repaired conveyance swale in the ravine. Where necessary, underground piping has been utilized. Stormwater is directed through this system to a series of drywells located outside the boundary of the landfill, where infiltration into native soil occurs. The entire system has been kept shallow to avoid mixing with the soil cap, with flexible lining in place to protect integrity and function of the system over time. In addition, an extensive vegetation infrastructure is also in place throughout the ravine to provide passive remediation, based on plants and fungi in bioswales and retention areas that are capable of processing, binding, or removing contaminants. While helping with remediation, these vegetated areas also provide needed habitat as well as increase the aesthetic and recreational value of the ravine.

Ecological restoration

The commitment to restoration of the degraded landscape and generation of healthy habitat for native plants and animals is another key element of the project. When purchased, the site was covered with invasive species such as Himalayan blackberry, English ivy, and Scotch broom with little presence of native species. As a consequence, an important restoration objective for Dharma Rain has been the recovery of the degraded natural system especially focused on establishing a resilient community of native plants.

Ecological restoration of the ravine was conceived to include both removing invasive species as well as establishing a resilient community of native plants. Removal of invasive plants was begun as soon as practical after purchase of the land. Over the course of several years, numerous volunteer work parties incorporating members of the sangha as well as the local neighborhood associations accomplished the task of removing most of the blackberry and ivy from the ravine. More work parties, including volunteers from Friends of Trees, planted hundreds of native plants in the ravine and dozens of fruit trees in the orchard. Over the short term, restoration was targeted to provide immediate habitat and complete the wildlife corridor for

native species while minimizing the potential for competition with non-natives. The long-term objective was focused on generating a native plant community structured like a forest with the potential to regenerate over time. For example, trees like big leaf maple and conifers were selected to provide canopy for native shade-tolerant shrubs, and thereby prevent the growth of invasive Himalayan blackberry that needs more sun.

General building design considerations

The Sodo was designed and constructed with standard green building criteria in mind, including environmentally responsible and resource-efficient elements incorporated throughout the planning and design process, construction, and subsequent building operation. For example heat recovery ventilation; a heat pump mechanical and water system; efficient appliances; a 10 Kw photovoltaic array; and air sealed building techniques were used.

Architectural design provides for open space that can be used for multiple purposes. These purposes are organized around activities, with a large room used for sangha gatherings and resident meals adjacent to the meditation hall. Windows are large and extend to the floor in the community room to provide plenty of natural light and connection to outdoors. In the meditation hall, windows are ample and carefully placed high enough to allow sunlight in without providing distracting views, and skylights in the roof provide more natural light. A traditional engawa, or covered walkway, encircles the entire building to provide additional connection with outdoors that can be used throughout the year.

Building materials were carefully selected to be low-impact or recycled as much as possible, e.g., using salvage wood that was cleaned and remilled for the flooring. The renovation of duplexes as residences is another example of recycling practice, thereby making use of buildings that are already constructed rather than building anew.

Community relations

Finally, a necessary component of success continues to be active recruitment, involvement, and support of the local community.

From the beginning of the development process, Dharma Rain has made a concerted effort to reach out to the surrounding neighborhood to inform people of plans and to enlist their input and cooperation. As previously mentioned, the surrounding neighborhood has been very interested to see a beneficial use for this property. A series of focus group meetings was held in the fall 2012 with surrounding neighborhood groups (Madison South and Roseway) to discuss relevant issues, especially those related to the public pathway on the property that provides access to surrounding greenspace. Participants uniformly expressed enthusiasm and interest in this pathway, which has been designed to be open to the public with much of it accessible to people with disabilities. The path begins on NE 82nd and passes through a mosaic of wooded areas, community gardens, on-site parking, and the small cluster of residential units and temple proper. It eventually connects indirectly with the recreational area on Rocky Butte, thereby

serving to provide important and previously underutilized access to nature for this area. The path is intended to provide a welcoming face for Dharma Rain as well as offering an opportunity for quiet contemplation. More practical benefits of the path include protection of native wildlife habitat from the effects of haphazard pedestrian traffic. Additionally the public nature of the path helps to prevent vandalism and dumping.

In addition, Dharma Rain has attracted a large network of partners focused on ecological concerns because of prominent habitat restoration activity and potential for the site to serve as a critical link in a wildlife corridor inside the city. Funding for restoration has been received from widespread sources ranging from private (e.g., Spirit Mountain Community Fund); local (e.g., East Multnomah Soil and Water Conservation District); regional (Metro Regional Council); state (e.g., Business Oregon) and federal sources (e.g., Environmental Protection Agency).

Other local groups have provided critical support in multiple ways. For example, Groundwork Portland (a non-profit organization focused on sustainable community-led improvement of the physical environment in low-income areas) has made possible a particular emphasis on involving community members in site restoration. As previously mentioned, Friends of Trees provided key support by donating and planting and watering vegetation for the ravine and trees for the orchard. Oregon Tradeswomen provided labor to help complete construction of the workshop. Additionally, Portland Community College, Portland State University, Madison High School, and Jason Lee Elementary School indicate their support by plans to utilize the site as a field laboratory for science classes.

The preschool provides another critical dimension for community involvement in this project. The development of the new temple provides space for the preschool that was not available before, and brings to fruition a long-standing objective to expand the children's program to serve younger children. There is a distinct need for such a service in this neighborhood, where the relatively high poverty rate is associated with high risk factors for student success in school. The preschool presents the Montessori curriculum, which is closely aligned with Zen Buddhist ethics and practice, so it provides a close fit with the larger mission of Dharma Rain. Additionally, the relatively large acreage of the property provides the context for summer camp sessions focused on the natural world, and thereby additional opportunity to teach young children about living in harmony with animals and plants in a fun way appropriate for their developmental level.