



Executive Summary

The WSU Arboretum & Wildlife Conservation Center (AWCC) is a bold concept. The strength behind this idea is that people will be able to use what they learn here to enrich their lives. Most importantly, the AWCC offers hands on teaching, learning, and research in a series of innovative facilities and thoughtfully designed sustainable architecture.

In 2007, WSU President Elson S. Floyd provided an opportunity for a 100 acre arboretum to be established on the WSU Pullman Campus. WSU Capital Planning & Development coordinated a Planning Committee that worked with The Portico Group and Miller Hull Architects to develop a master plan for a site that had been managed by USDA for over 60 years. The result of this master planning effort can be viewed in this document. The site and vision has expanded to include a facility for grizzly bears and a facility for wild herbivores. It includes a unique Biodiversity Center, an outdoor Raptor Amphitheater, a Living MachineTM, and a Story Circle to celebrate Native American Tribes, the forefathers of this land.

There are opportunities for demonstration plantings, ornamental displays, and native plant exhibits all connected with a series of trails. The

site provides an elevation differential of 130 feet, rolling slopes, and varied micro-climates. The concept is oriented in accordance with the cardinal points of the compass, which is the best use of readily available natural energy and which recognizes the spirit of the Plateau Tribes.

The AWCC can be started with modest funding because there are existing plant collections and wildlife research projects integrated into the master plan. Past efforts have been important for establishing the possibilities of this center. Historically, many of the famous arboretums and national parks in the United States were built during the Great Depression. They are the places we cherish as a society because they were built during difficult times with attention to craftsmanship, quality construction, inventiveness, and creativity. The same opportunity is presented at the WSU Arboretum & Wildlife Conservation Center. It is a place where our teachers, researchers, and students can be empowered to demonstrate their skills as they help build a center for sustainable living. The WSU Arboretum and Wildlife Conservation Center is where we learn to celebrate life and land as we honor the past and create the future.





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Team Acknowledgments

Client Team

Dr. Elson S. Floyd, President, Washington State University

Gregory P. Royer, Vice President for Business and Finance

Gerald R. Schlatter, AUA/AIA, Associate Vice President, Capital Planning & Development

WSU Planning Committee

Barbara Ashton, Tribal Affairs

Chuck Cody, School of Biological Sciences

Pete Jacoby, College of Agriculture, Human & Natural Resource Sciences

Virginia Lohr, Department of Horticulture & Landscape Architecture

Lynne Nelson, College of Veterinary Medicine

Kirk Pawlowski, Capital Planning & Development

Charles Robbins, Department of Natural Resource Sciences

Tim Rundquist, Facilities Operations

Bobbie Ryder, Capital Planning & Development

Rod Sayler, Department of Natural Resource Sciences

Lisa Shipley, Department of Natural Resource Sciences

Erik Stauber, College of Veterinary Medicine

Phil Waite, Department of Horticulture & Landscape Architecture

Design Team

William Hacker, The Portico Group

Dennis Meyer, The Portico Group

Craig Curtis, Miller/Hull

Caroline Kreiser, Miller/Hull

WSU Technical Support

Bobbie Ryder, Capital Planning & Development

David McCarroll, Capital Planning & Development

Terry Baxter-Potter, Capital Planning & Development

Cynthia Arbour, Capital Planning & Development

Watercolor Art

Mike Kowalski

Photo Credits

The Portico Group, Miller Hull, WSU Capital Planning & Development, WSU Arboretum & Botanical Garden website









Washington State University Arboretum and Wildlife Research Center

Introduction & Orientation

The Washington State University (WSU) Arboretum and Wildlife Research Center (AWCC) is located on a 170 acre site in the rolling Palouse hills, on the eastern edge of the Pullman campus. The west facing site rises above Airport Creek and Airport Road to a summit ridge top 130 feet above, where expansive views open back toward campus. The site is defined by two bowl landforms. The southern bowl is planted as open grassland, defined on the southeast by a forested ridge top and a broad open ridge along the northern boundary. The northern bowl has a distinct character created by a pine plantation along its southern margin and scattered tree groves along the swale and wetland at its center.

ponderosa pine grove along the southeastern ridge top, and a mixed pine plantation at the northern bowl.



View of the mature ponderosa pines and farm road that divides the site into north and south bowls.



Panoramic view of site looking to the south-west.

Though mostly planted in grasses, the site contains several significant tree groves, planted by university researchers and the USDA. They include a riparian forest dominated by cottonwood and willows along Airport Creek, a deciduous forest around the pond in the southwest portion of the site, a conifer wind break and a mature

In addition to the USDA Plant
Introduction Facilities south of the site,
other adjacent land uses include:
privately held wheat fields to the east;
the USDA sheep isolation pens, The
Tukey Horticultural Orchard and the
WSU Organic Farm to the north. West
of Airport Road are fenced farm fields,
the big horn sheep paddocks, the

Environmental Health and Safety Services buildings and the existing bear research facility.

Access to the site is currently provided at two points. A gravel road leads to the USDA Plant Introduction Facility along the southern margin. Farm roads extend to the ridge top and a more central drive into the bottom of the bowl. Access to the northern bowl is provided at the Steffen Center, directly across from the intersection of Airport Road and Animal Sciences Road.

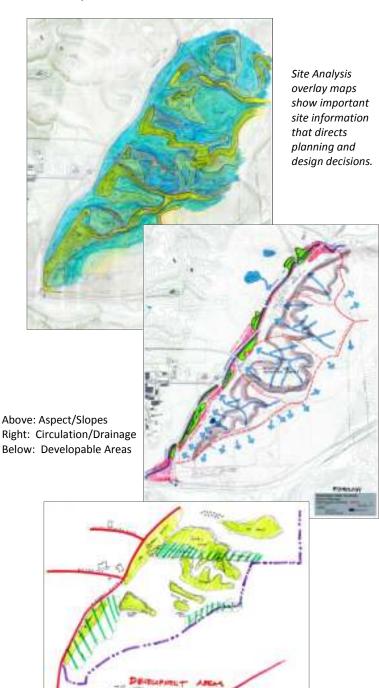


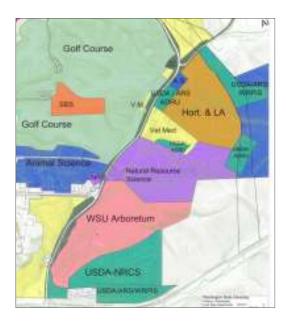
Steffen Center is a research center managed by the College of Agriculture, Human & Natural Resource Sciences

Site Analysis & Planning Process

The site inventory information was provided by WSU Capital Planning & Development Landscape Architects and Planners. The consultants from The Portico Group with Miller/Hull coordinated the design process and the Vision, Mission, and Goals for the project. They met on site with the WSU Planning Committee in January to discuss opportunities and experience a sense of what is possible. In a three day charrette the consultants met with students, staff, faculty, and administrators as they developed three

different concepts. By the end of the charrette the preferred concept was chosen. The consultants refined the final concept into the master plan concept illustrated in this document.





Although the land is owned by the State of Washington, land assignments are managed by WSU.



The WSU Planning Committee and consultants tour the site.



Vision:

The WSU Arboretum and Wildlife Research Center (AWCC) is a striking destination located in the rolling hills of the Palouse. The AWCC expresses the creative interaction of art, science, and culture and inspires a personal response and commitment to creating a sustainable world.

Mission:

The AWCC demonstrates WSU's commitment to life and land by engaging people of all ages in a deeper understanding of science. The center provides a gateway to an inspiring landscape; stewardship of a university arboretum; and access to a conservation wildlife facility showcasing research of global significance.



A three-day planning charrette provided a forum to investigate ideas.



Goal statements are presented as guiding elements. The details of these are presented as part of the "Site Walk Through."

Goals:

- 1. Create and maintain a unique destination
- 2. Provide a place to experience science of global significance
- 3. Honor, celebrate and interpret the ever-changing landscape of the Palouse
- 4. Demonstrate creative interaction among art, science, and culture
- 5. Inspire people to create a sustainable world
- 6. AWCC Project Elements which support the goals and serve the mission:
 - A Teaching & Research Arboretum
 - A Biodiversity Discovery Center
 - A National Bear Research Center
 - Wild Herbivore Research Center
 - A Raptor Flight Center
 - A Story Circle
- 7. Sustainable Design Goals
 - "Green Building Technology"
 - "Living Machine"
 - Storm-water Management
 Ecological Demonstration Projects
 - Natural Environments for Animals
 - Best use of site for Access and Service



Native steppe vegetation characterizes the Palouse.



The 100 acre Arboretum offers a wide range of opportunities for floral displays and demonstration gardens.





Above: WSU researchers Dr. Lynne Nelson and Dr. Charlie Robbins with 800 pound grizzly bear.

Left: A Story Circle can provide a venue for sharing traditions.

Site Walk Through

Entry

Visitors arrive from the main campus to the west along the Animal Sciences Road, Crossing over Airport Creek on a wooden bridge. They pass through the cottonwood and willow grove alongside the creek where water loving plants contrast with the normally dry Palouse hillsides. This wetland environment also showcases a habitat much reduced in the Palouse. It reminds us that creek beds are an important part of this landscape as they serve as sponges for spring floods, filter sediment and nutrients from run-off water and provide habitat for wildlife such as song birds and amphibians. The large pine plantation creates a transition as visitors enter into a special part of the campus.

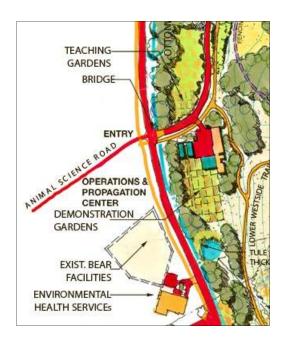
Operations, Propagation and Demonstration Yard

Located to the right is the Operations Propagation and Demonstration Yard, at the renovated Steffen Center, where the staff that nurture the new WSU arboretum and wildlife center are based. The head house and greenhouses complex is also the site of the student demonstration yard. Here horticulture and landscape architecture students, Master Gardener trainees and community members are involved in hands on learning, taking lessons from the drawing board to the landscape. Projects range from learning composting methods, propagation, tree planting and pruning techniques, paver installation, pergola and deck construction, rainwater harvesting methods, and xeriscaping techniques.

The entry road and bike and pedestrian path swings left to the north edge of the bowl, passing native plant teaching gardens and a wetland garden lining Airport Creek. Upslope plantings of aspen mark the swales and the path of water and snow melt, their light colored bark and vibrant yellow fall color highlighted against the dark green of the extensive pine plantation.



Typical views of existing vegetation and landforms.



Bear Research Center

Bikers and walkers catch a glimpse through openings in the forest to observe the four year old twin grizzly bears bounding across the meadow and wetland. It is an example of the combined research efforts of the arboretum and wildlife research center and WSU's commitment to life and the land.



Research staff and invited guests pull into the drive of the bear research center and holding facility. This facility greatly expands the capabilities of the existing program located across Airport Road. The facility provides indoor dens and outdoor runs for 25 – 30 bears, as well as researcher offices, labs, and meeting rooms. Initially, a 4.9 acre bear pen is provided with the option of expanding to two additional 5 acre outdoor pens. Innovative methods are used to capture, cleanse and recycle water that has been used for hosedown of the bear dens thereby reducing water usage. A system of natural treatment steps is designed to remove impurities and contaminants, which allows reclaimed water to be used for the irrigation of clover cover crop – a favorite of the bears.

A system of carefully placed fencing designed with moats and depressions are disguised with vegetation and allow the viewers to look over fencing and into the pens. This reduces the visibility of somewhat unsightly, but necessary double chain link fence.



The grizzly bear research facility will provide water for the bears to play in.



A Grizzly Bear enjoys watching the tourists from his existing WSU pen.

Wild Herbivore Research Center

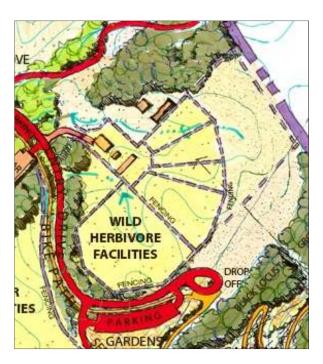
Mule deer, white-tailed deer, African blue duikers, beavers, porcupines, cottontails, and pygmy rabbits are some of the animals that could be viewed at the Wild Herbivore Research Center. Foraging behavior, nutrition studies and conservation research is actively being recorded and observed in this series of barns and pens. Tours allow visitors to pet and directly interact with deer and see other small mammals, some that are endangered. Students can be seen learning to do radiotelemetry, habitat measurements, animal body condition scoring, necropsy and other hands-on education assignments.



View from the ridge looking toward the existing ungulates facility



A baby deer is bottle fed by WSU researcher





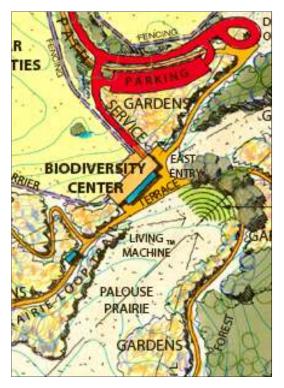
Mule deer research can be seen at the WSU Steffen Center



African blue duikers are cared for at WSU.

Biodiversity Center

The 0.7 mile main road and bike path continues south between the Bear Facilities and the Wild Herbivore Facilities, arriving at the visitor drop-off and parking area. As visitors walk up the gently sloping path to the Biodiversity Center, they pass by the first of the new gardens highlighting plants hardy to the Palouse.



The two-story Biodiversity Center appears to emerge out of the Palouse prairie ridge top. It is located strategically to allow views into both bowl landforms, which maximizes views of the site. Its design and orientation is timeless with the cardinal directions, so important to the traditions of the Native American tribes of the inland plateau region of Washington, Oregon and Idaho. The entry from the east and the multipurpose room are oriented in an east-west direction for traditional Native American gatherings. The public and program spaces are located on the main floor along with a bear viewing terrace on the north and a greenhouse conservatory space and arboretum terrace on the south.



Events are able to use both the inside spaces and outdoors.

The Biodiversity Center exhibits sustainable architecture with a living roof, passive solar greenhouse, photovoltaic panels, and a biofiltration system.



The Biodiversity Center provides a dramatic venue for special events, and on many evenings receptions are held on the terrace overlooking the arboretum and the bear facility. During the day, the Center is filled with school groups, as well as individual visitors who have come to experience the interactive displays highlighting the Palouse region, and WSU research aimed at better understanding biodiversity and the connections between people and their natural environment. The greenhouse conservatory space will provide a winter interior retreat and gathering space. Its living green walls and plant collections contribute to the building's indoor air quality. Other sustainable strategies include: passive solar orientation (east/west alignment), green roofs, photo-voltaic panels, and small-scale wind turbines. A *Living Machine*TM cleanses waste water for reuse in a subsurface irrigation system located in a separate greenhouse structure to the west.



The plant collections, gardens, trails and demonstration sites occupy approximately 100 acres. Major site elements orient the visitor and respond to the importance of the solar compass. In the Arboretum, an organizing east / west sight line ties together major elements including the:

- Raptor Amphitheater
- Palouse Prairie
- Story Circle
- Pine Ridge Overlook



Biodiversity Center opens lovely trellis.

To the east is the *Raptor Amphitheater* where visitors may experience educational presentations of live raptors and flight demonstrations of specially trained birds. Other activities and lectures are scheduled in this open air stage and seating area, which provides a panoramic view of the Arboretum plant collections.

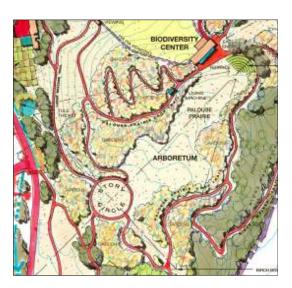
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ısonal year.

The *Palouse Prairie* is a central element of the arboretum collections and gardens. This reconstructed native prairie lies at the bottom of the west facing bowl shaped landform. The prairie is particularly stunning in the fall when waving grasses and forbs turn golden. In the spring it is transformed, but likewise, exceptionally beautiful when the landscape is in full bloom after a winter of snow covered fields.



The two hundred-fifty foot wide prairie grass covered **Story Circle** provides a gathering space for Plateau Tribes, various ceremonial events and cultural

experiences. Defined by a perimeter path, the circle is oriented to the four cardinal directions, and is located at the center of the arboretum collections. The northern axis and sight line links the Tule Thicket, a wetland planting alongside Airport Creek. The southern axis focuses on a semicircular grove of aspen, their white bark in striking contrast to the dark evergreen forest backdrop along the southeastern ridge. The eastern axis ties the Raptor Amphitheater to the Pine Ridge **Observatory** at the highest site elevation, providing dramatic panoramic views.



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Located on the summit of the arboretum and wildlife research center site, the *Pine Ridge Observatory* firmly ties the site to the greater Palouse landscape: the Palouse Range to the east in neighboring Idaho, Bald Butte to the south, campus to the west and Kamiak and Steptoe Buttes to the north.

Trail System

Visitors have access to the arboretum's gardens and plant collections along a primary loop trail. Two secondary trails and two spur trails provide additional access to the collections.



A series of trails provides a variety of experiences throughout the Arboretum.

The *Palouse Prairie Loop Trail* is a 0.9 mile trail that provides an overview of the plant collections. It begins at the Biodiversity Center terrace and encircles the Palouse prairie reconstruction, replete with plantings of Native American harvested plants such as camas, wild potatoes, carrots and celery. It provides access to the Raptor Amphitheater, Story Circle, Pond Grove and Aspen Bowl. It also passes through the major garden spaces that are located on south and north facing slopes and atop the broad ridge west of the Center.

A spur trail criss-crosses the *Bear Plateau Garden*, highlighting native plant gardens and creatively displayed collections of edible plants including raspberries, blackberries, and blueberries.

The *Ridge Walker Loop Trail* is a 0.5 mile secondary trail that connects to the Palouse Prairie Loop Trail at the Raptor Amphitheater. The trail switchbacks up through the black locust forest and understory swaths of plantings to the Pine Ridge Observatory. Following the ridge top west the visitor walks through a conifer forest windbreak before descending back to the main loop trail.

The *Forest Loop Trail* is a 0.75 mile secondary trail that provides visitor access to the southernmost portion of the Arboretum. The route begins at the story circle, passing below the existing pond and through the existing deciduous forest, composed primarily of a mixture of ash, cottonwood and willows.

The *Creekside Trail* is a 0.5 mile spur trail paralleling the creek and road. It connects the Grimes Way / Airport Road intersection to the access drive leading to the USDA Station. Wetland and riparian zone reconstruction efforts include plantings of cottonwood, ash, willow and dogwood, rushes, sedges and cattails along these bottomlands. A short trail connects up to the Forest Loop Trail and provides access up to the main portion of the Arboretum as well as a connection to the Bill Chipman Trail. A trailhead parking area is located at the most southern portion of the site and connects visitors who wish to bypass the animal facilities and go directly to the arboretum experience. Another small parking area located off of Airport Road provides parking for the Story Circle.

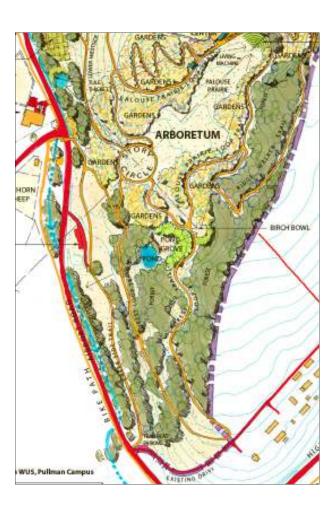
The *Lower Westside Trail* is a 0.3 mile spur trail connecting the Story Circle to the Operations and Propagation Center and Demonstration Yard located at the revitalized Steffen Center. This trail passes above the Tule Marsh and provides access uphill to a bear viewing shelter. Located at the bottom of the swale, the shelter provides views uphill to the bears roaming the largest of the paddocks with glimpses of big-horn sheep perched on rocks across Airport Road.

Gardens and Collections

The arboretum emphasizes the beauty, ecology and diversity of trees, shrubs, and other plants that are hardy in the Palouse Prairie bio-region of Eastern Washington. Gardens and collections may include types selected from the following list:

- Shade Gardens: Both native and ornamental plants adapted to northern slopes and shade conditions.
- Sun Gardens: Plants adapted to southern slopes and full-sun conditions
- Xeriscape Gardens: Both native and ornamental plants adapted to low moisture conditions. This could include a cactus and succulent display garden.
- Rain Gardens: Located adjacent to a building/facility, gutters and down spouts can directly feed these specialized gardens.
- Architectural Plants Garden:
 Plants that have distinct shape,
 outline, and presence and form.

- Vertical Garden:
 Displays/demonstrations of plants used to create green walls.
- Native Plant Gardens: Show the use of native plants in ornamental design.
- Formal Garden: A garden that uses plants in a traditional and formal design to create an outdoor space for events.
- Other gardens, such as:
 Restorative Garden; Sensory
 Garden; Invasive Plants Garden;
 Meadow Restoration Garden;
 Tanglewood Garden.



The Future is Ours

The WSU Arboretum and Wildlife Research Center provides a unique opportunity to learn about the unprecedented challenges we are facing on this dynamic earth. It celebrates our history and a diverse community of people, plants and animals. It demonstrates the importance of plants as the foundation of life, and how people and wildlife can live collaboratively. At the AWCC you can enjoy hands-on activities about the environment, observe researchers developing globally significant science, and learn what WSU is doing to contribute to a sustainable planet. The WSU Arboretum and Wildlife Research Center is a visionary concept with tremendous educational and research opportunities. WSU is proud to promote this exciting project because we believe the world needs big ideas. Come join us on the journey toward developing a sustainable future and making the world a better place.



Raptor shows provide visitors a close up experience with birds that have been rehabilitated.



Existing plant collections provide a starting point for the Arboretum.



An existing filtration pond was construction in the mid-1940s. This provides a beautiful water garden opportunity within the arboretum.

ENGAGE

EXPRIENCE

INSPIRE

Goals and accompanying objectives are detailed to explain how the vision and mission will be fulfilled at the WSU Arboretum & Wildlife Conservation Center.

Goals & Objectives:

1. Create and maintain a unique destination

- Develop a 170-acre Arboretum and Wildlife Research Center, including
 - A university arboretum located in the dynamic Palouse landscape.
 - A conservation wildlife facility featuring grizzly bears, mule deer, raptors, bighorn sheep and other native wildlife (e.g., birds, bats, amphibians, reptiles, insects).
 - A biodiversity center to provide year-round activities and a living laboratory that provides a window into the ways that we understand our natural world.
 - A place of celebration for native peoples of the Palouse

- Work toward a carbon-neutral site by eliminating net carbon emissions throughout the life of the site, including construction, operations, and maintenance.
 - 2. Provide a place to experience science of global significance
- Develop interactive and educational displays highlighting university research and interpreting the live plants and animals visible on the surrounding grounds.

3. Honor, celebrate and interpret the ever-changing and unique landscape of the Palouse

 Display plants of the Inland Pacific Northwest, with a focus on native plants and other horticultural varieties that are well adapted to this arid region.

Wildlife Research Facilities

Biodiversity Center

Arboretum



4. Demonstrate creative interaction among art, science, and culture

- Research and incorporate demonstration projects that feature "ecological engineering."
- Design and maintain site signage and sign copy to incorporate appropriate Native American language and cultural references.
- Provide an engaging venue for programs, announcements, receptions and events.

5. Inspire people to create a sustainable world

- Provide educational experiences that help people better understand how they can have important effects on the global community.
- Provide interactive learning opportunities that show sustainable building materials and methods.
- Teach people about small adjustments they can make in their lives to improve the community where they live.

6. AWCC Project Elements support the goals and serve the mission:

- Demonstration and display gardens. Examples may include:
 - Shade Gardens: Both native and ornamental plants adapted to northern slopes and shade conditions.
 - Sun Gardens: Plants adapted to southern slopes and fullsun conditions
 - Xeriscape Gardens: Both native and ornamental plants that are adapted to low moisture conditions. This could include a cactus and succulent display garden.
 - Rain Gardens: Located adjacent to a building/facility, gutters and down spouts can

- directly feed these specialized gardens.
- Architectural Plants Garden:
 Plants that have distinct shape, outline, and presence and form.
- Vertical Garden:
 Displays/demonstrations of plants used to create green walls.
- Native Plant Gardens:
 Showcase the use of native plants in ornamental design.
- Formal Garden: A garden that uses plants in a traditional and formal design to create an outdoor space for events.

Other gardens, such as: Restorative Garden; Sensory Garden; Invasive Plants Garden; Meadow Restoration Garden; Tanglewood Garden.

A Biodiversity Discovery Center

- Interactive displays highlight WSU research aimed at better understanding our natural world, the connections between humans and their environment, and ways that we can lead a more sustainable existence.
- Exhibits interpret concepts such as: the needs of wildlife; the role of ecological diversity in the modern world; and techniques in wildlife conservation with worldwide applicability.
- Educational programs for school groups and other visitors help to foster a deeper understanding, appreciation and respect for biodiversity.

 A comfortable year-round gathering place provides a dramatic venue for special events including receptions, meetings, and public outreach activities.

A National Bear Research Center

- The Bear Center provides a unique opportunity for the public to watch and learn about bears, their habitat, and on-going research.
- Displays interpret internationally recognized WSU research on both wild and captive bears.
- Interpretive exhibits explain bear hibernation as a unique adaptation with clinical applications for the study of heart, muscle, and bone disease in people and pets.

A Raptor Flight Center

- Falconry displays allow visitors to get close to raptors and learn about the importance of birds in the ecosystem.
- An outdoor amphitheater provides demonstration space for raptor flight shows and other educational programs.

Wild Herbivore Research Center

- A flexible outdoor space for future wildlife and small animal research needs.
- Large exterior pens are used for studying ungulate foraging behavior
- Exterior space is available for use by a range of academic classes.

 Special areas to conduct controlled studies and where the deer will feel calm and in their native environment.

A Story Circle,

- Providing a gathering place to share traditions and stories of the Plateau People.
- The Story Circle will be surrounded by paths for passing by and watching activities that may be happening within the grassy gathering space.
- The Story Circle will serve as a gateway and unifying element to the many divergent paths and micro climates through the arboretum.

7. Sustainable Design Goals

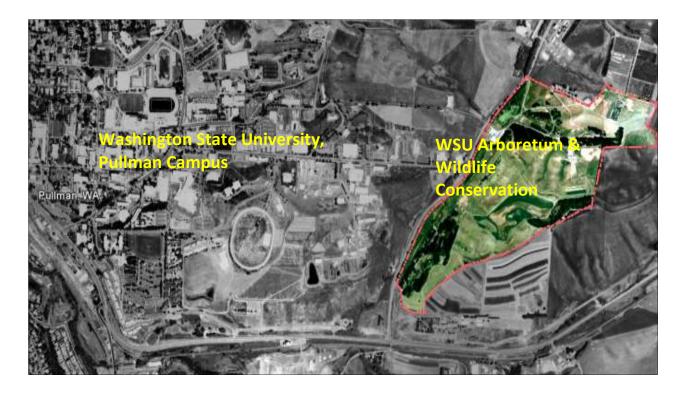
- "Living Machine:" Feature an onsite water filtration system (such as a "Living Machine"™) to demonstrate the process of treating waste by using plants and biological filtering methods.
- "Green Building Technology:" Use "living roof" technology for buildings on site, particularly at the Biodiversity Center. Create buildings that demonstrate and display practical ways that people can use green building technology in their daily lives.
- **Storm-water Management:** Design storm-water management features as landscape amenities to improve both water quality and aesthetics.
- Ecological Demonstration Projects: Incorporate ecological engineering demonstration projects and demonstrate the research that is the foundation of such projects.

Natural Environments for Animals:

Design outdoor animal pens to look like natural environments whenever possible.

- Access: Build and maintain walking trails that are accessible for all people.
- Service: Minimize vehicular circulation throughout the site with adequate service access for maintenance that is integrated into the natural quality of the environment.

The AWCC 170 acreage demonstrates WSU's commitment to sustainability and their relationship to plants, animals, and the land.



"The land unites us with (our ancestors) across time, keeping our culture alive. It provides food and water, shelter and beauty, and above all, a sense of place...."

(Adapted from a publication of the Nez Perce Tribe, "Ensuring Our Future, Honoring Our Past").

"In our way of life...with every decision we make, we always keep in mind the Seventh Generation of children to come...When we walk upon Mother Earth, we always plant our feet carefully, because we know that the faces of future generations are looking up at us from beneath the ground. "

Oren Lyons, Faithkeeper, Onondaga Nation









Addenda List

Images:

- Grizzly Bear Research Facility Watercolor
- Concept Diagram Bear Holding Building
- Biodiversity Center Watercolor
- Concept Diagram Biodiversity Building
- Events Terrace at Biodiversity Center
- Raptor Amphitheater
- Trail Walker and Story Circle

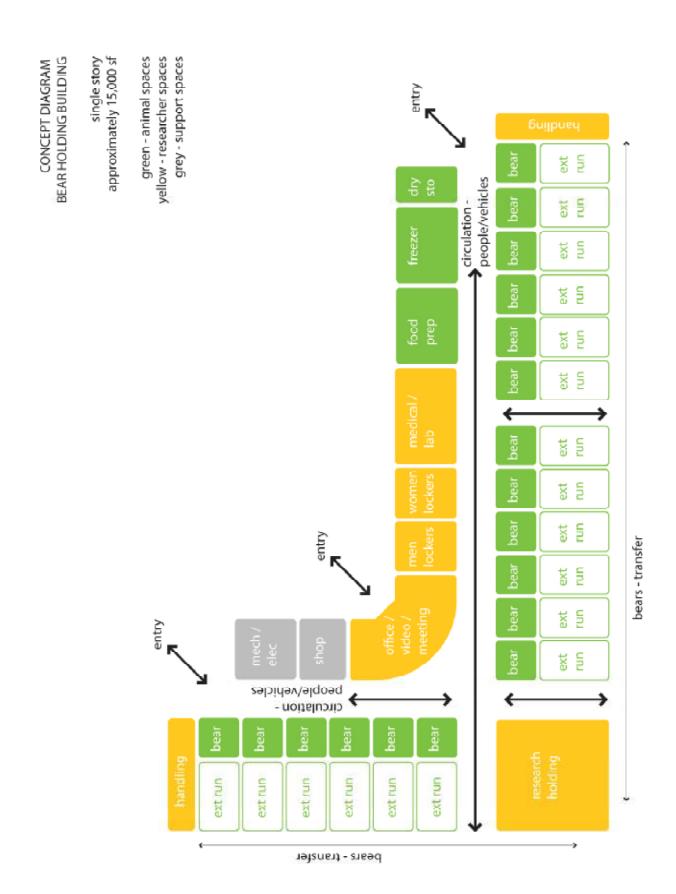
Program Elements showing space estimates

Budget Summary

- 50 Year Master Plan Estimate of Costs
- Proposed Phased Development Plan

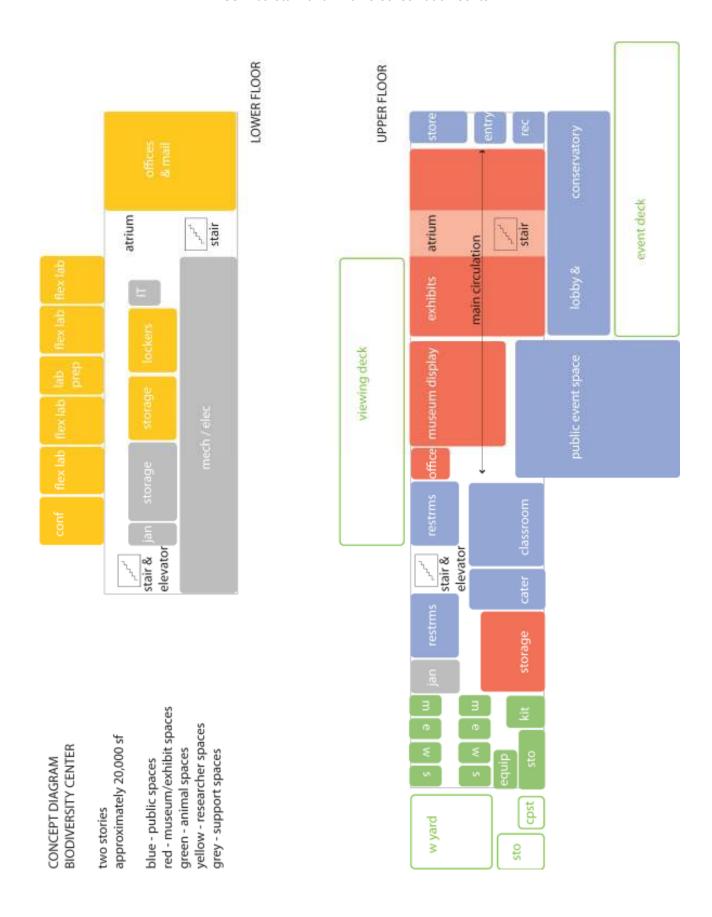
Arboretum & Wildlife Center Master Plan Map





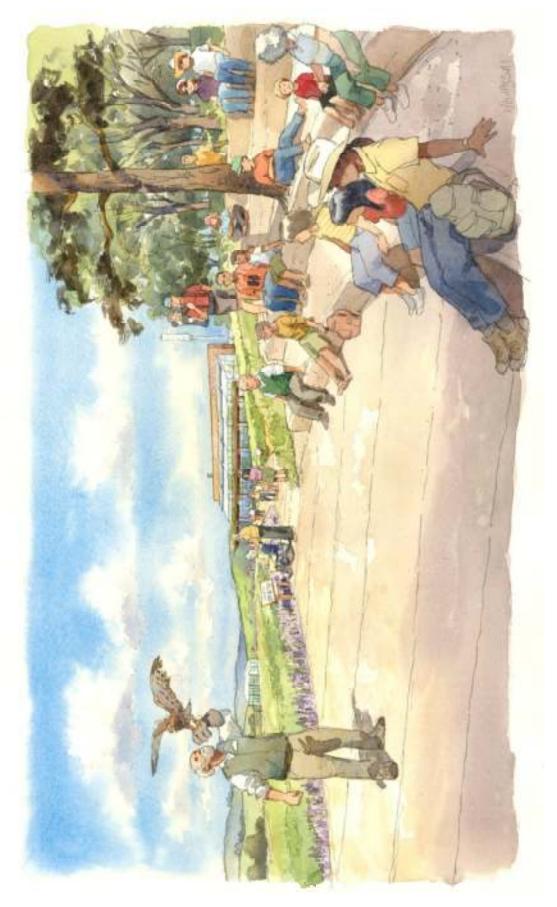


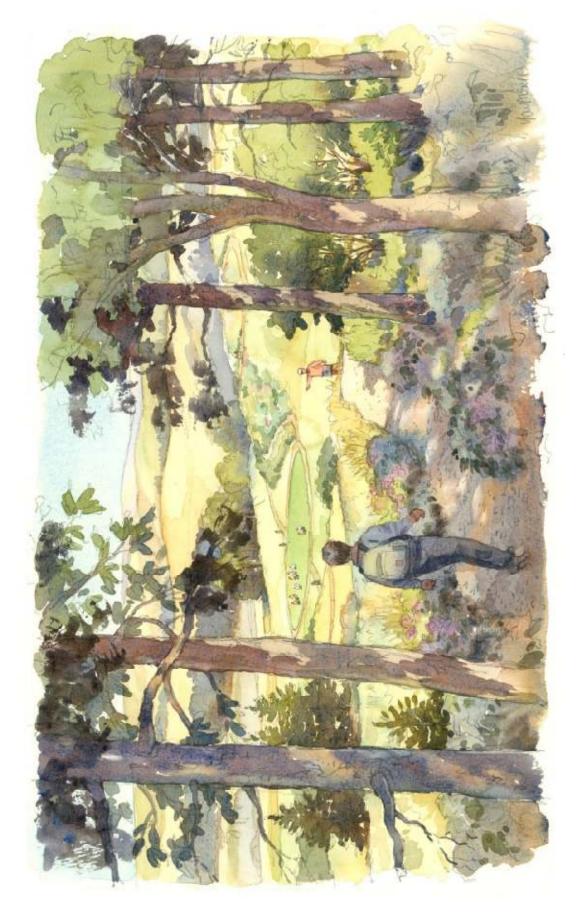
Biodiversity Center





Events Terrace at Biodiversity Center





WSU Arboretum and Wildlife Research Center Master Plan Program

PRO	PROGRAM ELEMENTS Unit C					
1.2	Site I	nterpreta	tion			
	1.2.1	Trailhea	d Interpretive panels, kiosks	Allow	-	
	1.2.2		ected interpretive system (audio wand)	Allow	i	
	1.2.3	Trail Int	erpretive Exhibits & Wayfinding	Allow	1	
1.3	Circu	lation				
CATOO	1.3.1	Terrace	s			
		1.3.1.1	Entry Court at Biodiversity Center			
			Entry Plazas	SF	5,000	
	1.3.2	Roads a	nd Parking			
		1.3.2.1	New Entry Road, 22 ft. wide a/c paving	SF	83,600	
		1.3.2.2	Service Drive at Bear Holding, 22 ft. wide a/c paving	SF	4,180	
		1.3.2.3	Overflow Access Drive	SF	19,800	
		1.3.2.4	Parking	SF	19,200	
		1.3.2.5	Overflow Parking and Access Drive	SF	90,000	
		1.3.2.6	Bear Service Yard	SF	5,600	
		1.3.2.7	M & Operations Yard	SF	8,300	
	1.3.3	Trails				
		1.3.3.1	Multi-purpose entry trail, 10 ft. wide, a/c paving	SF	38,000	
		1.3.3.2	Loop trail system, crushed surfacing		,	
			Palouse Prairie Loop Trail, 8 ft. wide	SF	39,200	
			Ridge Walker Loop Trail, 4 ft. wide	SF	10,000	
			Forest Loop Trail, 4 ft. wide	SF	15,600	
			Creek Side Trail, 4 ft. wide	SF	10,400	
			Lower Westside Trail, 4 ft. wide	SF	6,800	

WSU Arboretum and Wildlife Research Center Master Plan

Program

The Portico Group w/ Miller | Hull Partnership

	HELEM		Unit	Quantity
Display Gardens and Woody Plant Collections				
1.4.1	Palouse	Prairie	SF	225,90
1.4.2			SF	42.50
1.4.3	2011 10 1 #NETO CONSULT ONE		SF	31.00
1.4.4			SF	60
1.4.5	7 ()			2.2
	1.4.5.1	Entry / Parking / Arrival Gardens	SF	160,90
	1.4.5.2	Amphitheater backdrop	SF	19.00
	1.4.5.3	Palouse Gardens	SF	631,10
	1.4.5.4	Pond Circle	SF	51.44
1.4.6				
	1.4.6.1	Arboretum Area	SF	550,80
	1.4.6.2	North Meadows	SF	1,215,00
	1.4.6.3	Bear North Perimeter	SF	238,30
1.4.7	Shrub N	fassing		
	1.4.7.1	Dogwood entry	SF	63,30
	1.4.7.2	Grimes Way corridor	SF	31,60
1.4.8	Tree Groves			
	1.4.8.1	Riparian Forest at Airport Creek	SF	146,80
	1.4.8.2	Pond Forest Enhancements	SF	605,70
	1.4.8.3	Pine Ridge Forest	SF	550,30
	1.4.8.4	Black Locust Forest Enhancements	SF	294,00
	1.4.8.5	Black Locust Forest at Parking Lot	SF	68,00
	1.4.8.6	Aspen Grove	SF	104,70
1.4.9	Perimet	er Deer Fence	LF	15,50

WSU Arboretum and Wildlife Research Center

Master Plan

GRAN	I ELEM	ENTS	Unit	Quantity
Bear	Facilities		33,000	
1.5.1	Bear He	olding Building		
	1.5.1.1	Administration		
		Office	SF	2
		Video Room	SF	i
		Meeting Room	SF	- 1
	1.5.1.2	Technical Support		
		Laboratory	SF	
		Medical Area	SF	5
		Restroom / Locker / Shower	SF	3
	1.5.1.3	Food Preparation		
		Kitchen/Food Preparation	SF	4
		Walk-in Freezer	SF	4
		Dry Good Storage	SF	2
	1.5.1.4	Animal Support		
		Bear Dens	SF	2,5
		Outside Runs	SF	4,3
		Bear Handling Area	SF	4
		Research Holding Area	SF	1.2
	1.5.1.5	Facility Support		1130
		Shop	SF	2
		Janitorial	SF	1
		M/E/CIRC/ETC	SF	6,1
			SF	17.6
1.5.2	Paddocl	o .		
		Bear I	SF	213,0
		Bear II	SF	416,3
		Modify Deer I	SF	207,2
		Modify Deer II	SF	163,7
1.5.3	Perimet	er Double Fence	LF	4.7

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Master Plan

Program

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GRAM ELEMENTS		Unit	Quantity
Biodiversity (enter Building	177	
1.6.1	Public / Shared Services		
1.6.1.1	Entry	SF	10
1.6.1.2	Lobby / Conservatory	SF	1,00
1.6.1.3	Reception	SF	10
1.6.1.4	Bookstore / Sales	SF	20
1.6.1.5	Retail Storage	SF	10
1.6.1.6	Classroom / Exploratory Lab	SF	60
1.6.1.7	Auditorium (public event space)	SF	2.25
1.6.1.8		SF	30
1.6.1.9	Restrooms	SF	60
1.6.1.1		SF	20
1.6.2	Interpretive Exhibits	SF.	20
1.6.2.1	Exhibits (hands-on)	SF	1,50
1.6.2.2	Museum Display	SF	1,00
1.6.2.3		SF	50
1.6.2.4	Conner Site Office (confirm)	SF	12
1.6.3	Research & Administration	SE	4.5
1.6.3.1	Research Offices (Arboretum/Bears)	SF	96
1.6.3.2	Conference Room	SF	30
1.6.3.3	Mail Room	SF	8
1.6.3.4	Flexible Laboratory (4 Bays)	SF	1.20
1.6.3.5	Laboratory Preparation	SF	30
1.6.3.6	Storage	SF	30
1.6.3.7	Lockers / Showers	SF	25
1.6.4	Wildlife	51	23
1.6.4.1	MEWS	SF	52
1.6.4.2	Kitchen / Food Preparation	SF	12
1.6.4.2	Storage	SF SF	12
1.6.4.4	Bear-related Equipment Storage	SF	8
1.6.4.4	Facility Support	SF	o
1.6.5.1	Janitorial	SF	10
1.6.5.2	IT Server	SF SF	8
1.6.5.3	General Storage	SF SF	30
1.6.5.4	M / E / CIRC / ETC	SF SF	8,22
1.6.5.4	Exterior Program Area	Sr	0,22
	8	SE.	1.20
1.6.6.1	Viewing Deck / Event Deck	SF SF	1,20 80
1.6.6.2	Living Machine		
1.6.6.3	Composting	SF	8
1.6.6.4	Storage (props etc)	SF	15
1.6.6.5	Flight Cages	SF	1,32
1.6.6.6	Weathering Yard	SF	50
		SF	25,55

WSU Arboretum and Wildlife Research Center Master Plan

Program

The Portico Group w/ Miller | Hull Partnership

GRA	M ELEM	ENTS	Unit	Quantity
Oper	ations and	d Propagation Center (Upgrade of Existing Steffen Center)		
1.7.1		Administration		
	1.7.1.1	Reception	SF	10
	1.7.1.2	Office Space	SF	60
	1.7.1.3	Conference Room	SF	15
	1.7.1.4	Mail / Media / Copy Room	SF	20
	1.7.1.5	Staff Space	SF	40
	1.7.1.6	Restrooms / Lockers	SF	60
	1.7.1.7	Lunch Room / Kitchenette	SF	30
	1.7.1.8	Volunteers	SF	30
	1.7.1.9	Storage	SF	20
1.7.2		Facility Support		
	1.7.2.1	Shop	SF	1,00
	1.7.2.2	Equipment Storage	SF	40
	1.7.2.3	Heavy Equipment Bays	SF	2,40
	1.7.2.4	Material Storage	SF	15
1.7.3		Propagation		
	1.7.3.1	Office / Records	SF	2,00
	1.7.3.2	Head House / Potting	SF	1,80
	1.7.3.3	Propagation Greenhouse	SF	5.80
	1.7.3.4	Indoor Material Storage	SF	1,00
1.7.4		Exterior Facilities		07.545
	1.7.4.1	Lath House	SF	2.00
	1.7.4.2	Raised Planting Beds	SF	4,00
	1.7.4.3	Open Material Storage Bins	SF	3.00
	Stantas.	505.00 COLUMN COMPANION (26,40
Infe	structure			
1.8.1	Storm Drainage		Allow	
1.8.2	Sanitary Sewer		LF	3,80
1.8.3	CANADA SA PER CANADA SA CA		LF	3,80
1.8.4	Electrica	al / Communications Duct Bank Service	LF	3.80
	Gas Service		LF	3,80

Arboretum and Wildlife Research Center

6/24/2009

