

# 2015 Exhibition of School Planning and Architecture

## Odyssey Elementary School

Category: New Construction



Davis School District, Woods Cross, Utah





Odyssey Elementary School

## Site Plan

The landscaping reflects the theming of the building, (“Bodies in Motion: The Animal Kingdom”), representing the ways creatures move with plant materials and sculptural concrete. On the north side, footfall patterns show up in concrete textures and benches. In the courtyard, the idea of flight or swimming and the swirling vortices created by beating wings or fins are represented with benches and planter forms. On the south side, jumping is represented using benches indicating a springing motion.

The classroom wings are oriented E/W in order to allow all classroom windows to face either North or South for better daylighting and energy savings.



# Odyssey Elementary School



# Site Context

## Community Environment

The school district approached the city to help find the best site. This collaboration led to the purchase of a portion of an abandoned golf course acquired by the local Transportation department for a Parkway right-of-way. The school district and the city master-planned the remaining parcel for additional housing. Working with the city, Davis School District pioneered the development of streets and utilities to access the preferred school parcel from Redwood Road.

Local residents living north and south of the abandoned golf course were invited to city meetings to discuss connecting new streets to their existing neighborhoods.

The school site is adjacent to a wild-life preserve, so special care was taken to ensure that this area was left undisturbed. The goal is that the school, with its leadership in sustainability and energy conservation, will serve as a catalyst to an alternative form of development.





# Open House Scavenger Hunt Video flyer

## Community Environment

### Building Design:

Blue-Sky meetings included community members and engaged in the conversations that developed the program and conceptual design. Issues regarding a 2 story vs 1 story school, school safety, transportation (student drop off), parking, playground supervision, etc. were discussed. Various designs were presented, vetted and developed further. Interior theming was an important part of the school environment.

### School Naming:

Davis School District always engages the community in naming their schools.

A public meeting was held where the architect presented the theme of the new elementary school. The attendees suggested 22 names for the new school, which were narrowed down to 3 choices. These 3 were sent out to the entire community which then voted. Odyssey Elementary was selected as the name of the school.



welcome to odyssey



<http://youtu.be/2E3YkuCiykA>

construction recycling



<http://youtu.be/0mDZkiDAFF8>

classroom design



<http://youtu.be/CLgKADS2mew>

building design



<http://youtu.be/YH-zkAxOng>

planning



<http://youtu.be/D0GueQrkVUo>

site design



<http://youtu.be/m1y3c2R7Mzc>

landscape



<http://youtu.be/JoxpgUCKEKk>

energy



<http://youtu.be/iRE1UI--faY>

photovoltaics



<http://youtu.be/0fTLpNH9k4c>

mechanical



<http://youtu.be/IJvKv6JWLJg>

mechanical ventilation



<http://youtu.be/gILekrewktw>



# Open House

## Community Environment

### Open House:

Two days before school began an open house was held. Over 600 people showed up. The principal of the school gave a presentation showing off her wonderful school, and the students and their parents were sent off on a scavenger hunt for videos highlighting interesting aspects of their new school.

The general contractor brought animals to represent the 4 “habitats”. The “Run Habitat” had a pony, the “Fly Habitat” was represented by a Macaw, the “Jump Habitat” presented poison dart frogs (under glass of course), and the “Swim Habitat” held an alligator!





# Portals into Habitats

## Learning Environment

Odyssey was designed to bolster the educationally innovative pedagogy of the District. The school is built around the theme, “Bodies in Motion: The Animal Kingdom” and champions the importance of healthy, active lifestyles while helping students understand their place in nature. It is a **net-zero energy facility** that has successfully become the greenest, most energy-efficient public school in the state of Utah. Odyssey is on-track to earn a LEED Gold Certification. Utterly unique in its design, the school accommodates any learning modality the teachers wish to implement.



There are four small learning communities at Odyssey – groups of classrooms called “habitats” – red, orange, blue and green. Each habitat corresponds to one of the thematic motions of the school (Run, Jump, Swim, and Fly), and includes 8 classrooms, a central collaboration area, teacher prep and storage areas, and toilet room facilities.





## “Jump” Habitat Collaboration Area

### Learning Environment

The organization of students into habitats reduces anonymity and encourages collaboration. Classrooms are designed with a 16-foot-wide roll-up glass door, allowing them to flow into the collaboration space. Every classroom door light bears the image of an animal that performs the motion of the house (a kangaroo rat, a shark, etc.). Critical to the success of the project is the totally unique furnishing package of mobile chairs, tables, stools, ottomans and modular soft seating that students move at a moment's notice to accommodate different learning scenarios.

**“The building is part of the learning environment in a way I’ve never seen. It’s designed for collaboration and exploration. I want to be 10 years old again just so I can go to school at Odyssey.”** - Lily Eskelson, 2015 President of the NEA, after a visit to Odyssey and seeing how teachers and students are interacting there.





## Student Learning Space

### Learning Environment

Inside the learning spaces, full height cabinets are whiteboard surfaced, serving as impromptu sketching and writing surfaces for students as they work together. Teachers on the planning committee agreed that the sinks normally found in the classroom could be relocated to the collaboration space, allowing the functional size of the classroom to expand. Similarly, all millwork is a more easily utilized 18" depth, returning useable square footage to the learning spaces. Furniture selected directly fosters a project based curriculum. It is durable, yet light and on casters, so is easily reconfigurable to accommodate a variety of teaching methods. Many of the tables incorporate a white board top that students utilize during their work, table tops which can be flipped up and stacked out of the way during activities that need more open space.





## Image title

### Physical Environment – Inspiration & Motivation

Sustainability and energy efficiency were important goals from the outset. It was also decided that the building should incorporate the latest findings in educational research, providing teachers with the pedagogical tools necessary to give children the best education possible. The project team recognized that the building itself is an educational tool and designed it to provide large, flexible classroom spaces with furnishings that can be rearranged to accommodate various learning modalities. The walls and hallways of the building are peppered with inspirational quotes, encouraging students and patrons alike to do their best and make a difference in the world. Portals that open into the habitats include intriguing signage regarding the animals that run, jump, swim and fly. Images of athletic activities serve to further inspire students.





## Photovoltaic Panels act as Shading Devices on South facing windows

### Physical Environment

Odyssey will be the first LEED Gold public school in the state and the first Net Zero energy school in Utah. The goal of Net Zero came out of the intense planning process between the School District administrators, their energy team, and the design team. The mechanical system represents the duality of both simplicity and complexity. It is composed of components that many school districts would be familiar with; geothermal heating, two stage evaporative cooling, water-to-water heat pumps, thermal displacement ventilation, and a gas boiler. The complexity comes from the way the system is configured and the automation utilized to make the system run optimally. The system is designed to use the smallest amount of electrical energy possible, (with a modeled EUI of 20), which is fully offset by the 1200 photovoltaic panels on the roof. Additionally, solar panels double as sunshades over the windows on the south sides of the building. The lighting in the building is 100% LED, and utilizes daylight harvesting, and a user friendly controls system.





Portal entering the “Run Habitat”

Inside the “swim Habitat”

### Physical Environment

The building has an energy dashboard, (networked for use by teachers in the classroom), for children to interact with, learning about their school’s energy use. Students can see the exchange of heat between the earth and the building as well as what energy each area in the building is using - and how much!





## Building Theming

**Physical Environment** Building signage highlights the sustainable features of the building, water conservation, improved indoor air quality, high efficiency envelope, innovative mechanical system, alternate transportation accommodations, and recycling (both construction and for the occupants) for teachers and students. Branding of the building fosters a strong connection to the animal kingdom and nature, encouraging a life-long commitment to the natural world.





# Student Panel & Blue Sky Meetings

## Planning Process

After fourteen years of building the same award winning prototype elementary, the School District issued a challenge to the design team; to reimagine the prototype from the ground up to be more educationally and aesthetically stimulating while incorporating current and future educational pedagogies. The district also wanted this to be a Net Zero energy school, incorporating concepts of sustainability into all aspects of the design to foster the use of the building as a teaching tool.





# Furniture and Planning Meetings

## Planning Process

The program and early schematic design took a full two years to work through with the district design committee and the design team. Teachers from across the district, administrators, students and members of the community were involved in focused charrettes over that time to craft the learning spaces, parti and branding concepts. The ideas of breaking apart the dining room and multi-purpose rooms to be more integral to the building, the large collaboration spaces and connection of the teaching spaces to the collaboration were all born in this planning process. The process was deliberate and thoughtful – never rushed – which is evident in the quality of the spaces, the teachers' use of the building and the integration of the branding throughout the building and the site.







The overall goals of Odyssey Elementary were developed over a period of 24 months, utilizing a series of meetings and involving a wide variety of stakeholders interested in exploring ideas for a completely new kind of elementary school. The results of numerous surveys were also important in the goal development.

## Vision & Goals:

1. Project-based learning will be accommodated through the use of large flexible daylit classroom spaces adjoining large central collaboration spaces.
2. The facility will be designed to allow for easy and readily accessible technology – all occupants will utilize personal computing devices.
3. The school will be designed as a “destination”. Theming/branding to attract young people, create interest and generate curiosity in our students will be a central design goal, integral to the architecture.
4. Furniture selection will be a part of the building design. Furnishings must be comfortable, inviting, and selected to encourage learning. Furniture must be easily moveable and reconfigurable in order to allow for multiple varied activities.
5. Outdoor learning will be accommodated through the design of the outdoor space, specifically; outdoor courtyard(s) must be designed to facilitate learning activities.
6. The school must be beautiful, durable, and energy efficient. Net Zero energy usage and LEED Gold certification are desirable.
7. The building will engage the community, accommodate after school events, and serve as a hub for the neighborhood.



# Floor plan Level 1

Building spaces are multi-use for efficiency. The dining area is integrated into the circulation. Large glass doors between the dining area and the multipurpose room lift for use as an auditorium. There are no computer labs because technology is integrated into all learning spaces.



main level

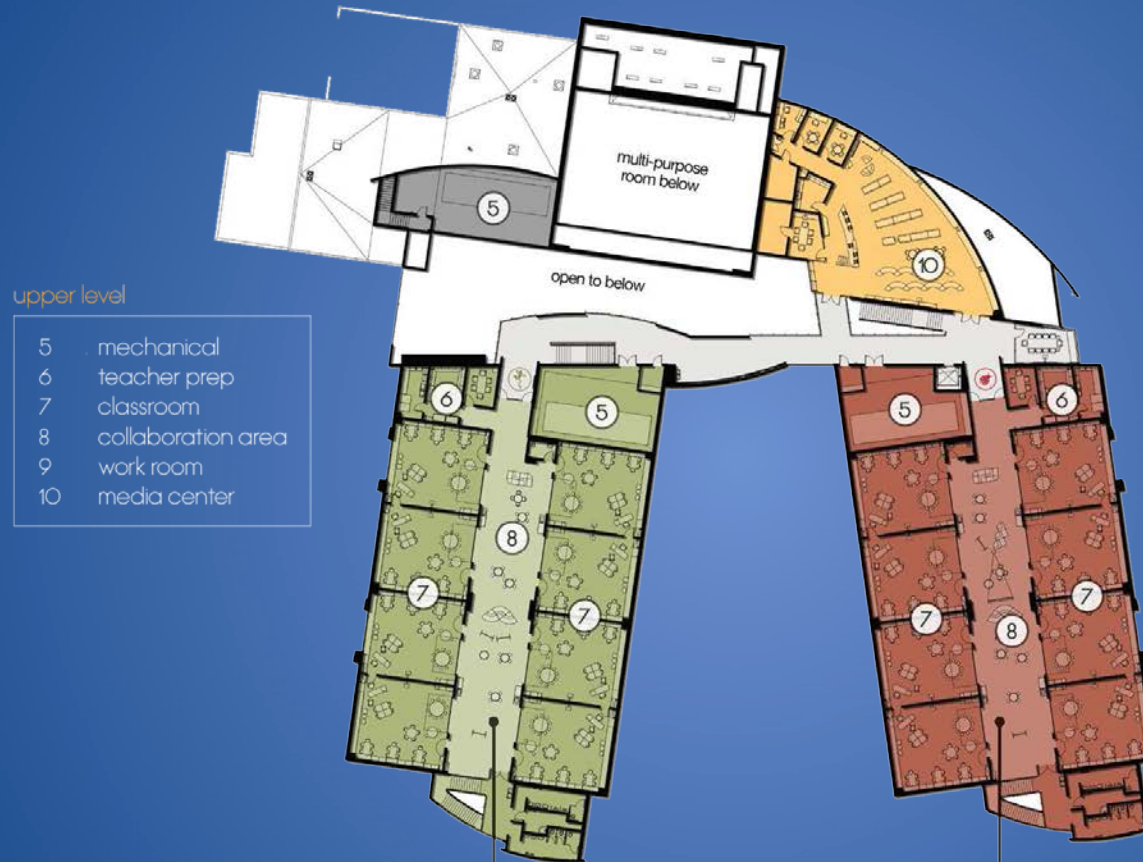
- |    |                    |
|----|--------------------|
| 1  | administration     |
| 2  | multi-purpose      |
| 3  | kitchen            |
| 4  | dining             |
| 5  | mechanical         |
| 6  | teacher prep       |
| 7  | classroom          |
| 8  | collaboration area |
| 9  | work room          |
| 10 | media center       |





## Floor plan Level 2

Multiple teachers can work together across the collaboration space by opening multiple doors. Each pair of classrooms is connected by a door as well. The floor plan's dedication to parity provides the flexibility to reconfigure grade levels, allowing for far easier cross-grade collaboration than possible a typical school.





# Exhibition of School Planning and Architecture

## Project Data

Submitting Firm :	VCBO Architecture, LLC
Project Role	Design Architect, Educational Planner
Project Contact	Jeanne Jackson, FAIA, LEED AP
Title	Principal-in-Charge
Address	524 South 600 East
City, State or Province, Country	Salt Lake City, UT United States
Phone	801-558-7440

Construction Firm:	Hughes General Contractors
Project Role	General Contractor
Project Contact	Jed Haacke
Title	Project Manager
Address	900 N. Redwood Road
City, State or Province, Country	North Salt Lake, UT United States
Phone	801-292-0530





# Exhibition of School Planning and Architecture

## Project Details

<b>Project Name</b>	Odyssey Elementary School
<b>City</b>	Woods Cross
<b>State</b>	Utah
<b>District Name</b>	Davis School District
<b>Supt/President</b>	Dr. W. Bryan Bowles
<b>Occupancy Date</b>	August 2014
<b>Grades Housed</b>	Pre-K - 6
<b>Capacity(Students)</b>	900 students
<b>Site Size (acres)</b>	12 acres
<b>Gross Area (sq. ft.)</b>	84,760 sf
<b>Per Occupant(pupil)</b>	94 sf/student
<b>gross/net please indicate</b>	.35
<b>Design and Build?</b>	No
<b>If yes, Total Cost:</b>	
<b>Includes:</b>	
<b>If no,</b>	
<b>Site Development:</b>	\$ 4,788,100
<b>Building Construction:</b>	\$13, 021,600
<b>Fixed Equipment:</b>	\$ 1,800,000
<b>Other:</b>	
<b>Total:</b>	\$ 19,609,700



## Supplemental Information – Post Occupancy

Throughout the process of this project, the design team has utilized a series of surveys to gather input. In mid March 2015, a Post Occupancy survey was launched on Survey Monkey. The survey tailors questions to students 3<sup>rd</sup> grade and above, staff, faculty and parents. 271 people filled out the online survey, (68% students. 12% Faculty, 2.5% Staff, and 17.5% parents). Selected Data is bulleted on the supplemental slides that follow.





# Post Occupancy – Selected Data

In response to the question “In your opinion, what factors are primarily responsible for the success of your child's academic performance and learning?” 46.67% of parents responded that the Classroom and Building design played a role.

Over 83% of responding faculty and students agreed that the layout of the school and classrooms makes it easy to work in groups, while over 86% felt that the layout of the school and classroom makes learning more fun.

More than 82% of respondents were satisfied with the outdoor play area and the courtyard.



# Post Occupancy – Selected Data

82% of responding faculty agreed that the layout of the school and classroom encourages student-teacher interaction.

Over 78% of teachers who responded were satisfied or very satisfied with the design of the building in helping them to provide quality learning experiences for their students.

Almost 88% of responding students and faculty agree that the classroom furniture is easy to move, and over 56% change the classroom layout and furniture locations weekly or oftener.

## SUSTAINABLE SITES

Sustainability and environmental impact held a high priority during design of the site. Different elements presented various challenges which needed to be addressed to infuse sustainability into the project.

- 1 Utilization of reflective materials on the building to reduce heat absorption. Did you know that cities and urban areas are warmer than adjacent open spaces? This is because we use a lot of dark building and paving materials that store heat. This is called the "urban heat-island effect." The roof on Odyssey is white, which reflects light instead of absorbing it. On the site, concrete was used in place of asphalt to reduce heat absorption, wherever it was feasible.
- 2 Integration of educational components. Odyssey Elementary School has been designed as a teaching tool to help everyone who visits understand more about the benefits of sustainable design. Signs explaining how Odyssey helps our environment are everywhere in your school!
- 3 Enhanced safety for pedestrian and bicycle traffic. The site includes safe pedestrian and bike paths to ensure you can walk or ride to school without having to cross cars and buses dropping off students.
- 4 Reserved parking for carpool, low emitting & fuel efficient vehicles. Preferred and reserved parking has been provided to encourage carpooling and lower-emission vehicles.
- 5 Native plant species in landscape. Local, native and drought tolerant plants have been planted throughout the landscape to contribute to reduced water consumption and to provide a beautiful and engaging learning landscape.





# Post Occupancy – Selected Data

61% of all classrooms open the large roll-up door weekly or oftener.

85% of respondents are satisfied with the amount of natural daylight in their classroom.

65% of the responders felt that the “habitats” help students feel part of the school community.





# Post Occupancy – Selected Data

86% of respondents found the "habitat" displays well designed, organized, and interesting (i.e., quotes, facts, animals, actions, colors, etc.).

Over 82% of those responding agreed that it is easy to find your way around school (i.e., such as finding a room you have never been to before).

Over 87% of all those responding to the survey were satisfied with the building overall.

