



# POWERHOUSE SCIENCE CENTER

## A Colorado Brownfields Case Study

### PROJECT SUMMARY

Constructed in 1893, the Durango Powerhouse, designed in historic Mission-style architecture, is the oldest standing alternating current (AC) coal-fired power plant in the world. By 1972 after nearly 80 years of operations, the Powerhouse building sat idle and vacant riddled with environmental contamination. In the mid-1990's, the City of Durango eventually purchased the property and site; however, for a while finding funding for remediation and renovation proved to be elusive.

Founded in 1994, the Children's Museum of Durango (operating under Durango Discovery Museum) eventually outgrew their original 1,100 square feet facility by 1999. In 2002, the Children's Museum contacted the City and submitted a proposal for converting the historic plant into an interactive science museum. The Durango City Council responded positively to the proposal by passing a resolution supporting the restoration of the Powerhouse as the Durango Discovery Museum. Beginning in 2002, volunteers began obtaining grants for historical renovation, asbestos removal, and site cleanup from the State of Colorado.

By 2006, the brownfield remediation of the site and the exterior renovation of the Powerhouse had been completed while the interior renovation of the Powerhouse into an interactive exhibit space took an additional four years to conclude. The museum opened to the public in February 2011. Since 2011, the museum has continued to evolve with new exhibit and education space, administrative offices, and a café being added.



Original Alternating Current (AC) Coal Fired Turbine



Interactive Children's Science Museum Center

### QUICK FACTS

**Location:** 1333 Camino Del Rio, Historic Downtown Durango, Colorado

**Project type:** Industrial power plant to interactive children's science museum center

**Site:** 8,000 square feet plant on 3 acres

**Former Use:** Alternating current (AC) coal fired power plant

**Renovated Use:**

- Children's Museum - operating under
- Durango Discovery Museum (DDM) from February 2011 to May 2015
- Powerhouse Science Center from September 2015 to present

**Potential Environmental Issues:**

- Uranium tailings (a byproduct of uranium mining)
- Mercury contamination
- Asbestos
- Petroleum plume

**Reuse Partners:**

- City of Durango
- Colorado Department of Local Affairs
- Colorado Department of Public Health & Environment
- Colorado Historical Society
- Durango Arts Center
- Durango Discovery Museum
- La Plata County
- National Parks Service
- Private Donors and Volunteers
- Rebuild Colorado



## FINANCING AND DEAL STRUCTURE

The total cost of the restoration project was estimated to be approximately \$4 million. Multiple entities partnered together to address the financial needs of the redevelopment by fundraising, collecting grant money, contributing countless hours of volunteer work, and garnering state support. From the state, the project qualified for a Targeted Brownfields Assessment of \$135,000. Of this amount, approximately \$45,000 came from CDPHE's Section 128(a) State and Tribal Response Program Grant to perform assessments on initial contamination assumptions, which included asbestos, pigeon waste, mercury, and uranium mining waste from an adjacent site. Another \$90,000 came from state funds for the removal of asbestos and more than 1,000 cubic yards of contaminated soil. Public and private donations contributed another \$2 million and included \$100,000 from the Gates Family Foundation and \$50,000 from BP America for solar equipment. In addition, many local firms donated time, labor, and materials to this undertaking.

## ECONOMIC AND SOCIAL IMPACTS

The economic impacts of the over \$4 million redevelopment project are both qualitative and quantitative. The amount of value added to the building is estimated at \$56,000. Other quantifiable impacts include the 8 full time staff and the economic impact that these staff salaries contribute to the local economy. In addition, the museum attracts approximately 20,000 visitors per year.

In addition, the Powerhouse Science Center project has played an integral role in advancing the town's collective goals of increasing the quality of life for local residents, stimulating local businesses and preserving the local character of the town.

By incorporating educational opportunities, preservation and economic development into this collaborative and inclusive community project, the Powerhouse Science Center has moved from being an eyesore to an asset. The Powerhouse Science Center is now a high-performance demonstration project and catalyst for river front revitalization. This project is part of a larger, riverfront restoration initiative that will produce new recreational space for both tourists and local residents—including a riverfront park, outdoor shops and exhibits, and walkways connecting the site to downtown Durango.

Economic Impact Summary				
	Powerhouse Science Center 2019	Former Use 2009	Increase in New Use	
<b>Value-Added</b>				
Building/Improvements value	\$ 651,140	\$ 594,710	\$ 56,430	
Property tax	tax exempt	\$ -	tax exempt	
Sales tax <sup>Note 1</sup>	\$5,000 (estimated)	\$ -	\$5,000 (estimated)	
<b>Employment Impact</b>				
Employment				
Employees (full time)	8		8	
Salaries and Wages	\$ 410,000		\$ 410,000	
Total Employment Impact	\$ 410,000	\$ -	\$ 410,000	
<b>One-Time Impact of New Investment</b>				
Planning, redevelopment and construction cost	\$ 4,000,000		\$ 4,000,000	
Environmental Services and Cleanup	\$ 135,000		\$ 135,000	
Total New Investment	\$ 4,135,000		\$ 4,135,000	
<b>Annual Visitors</b>	20,000+ in 2018		20,000+	

Note 1: Sales tax based on 4.9% combined sales tax for Colorado and La Plata County and estimated spending per visitor

Sources: Colorado Department of Public Health and Environment; La Plata County; Interviews with Powerhouse Science Center staff



## ENVIRONMENTAL CHALLENGES

The Powerhouse site contained several environmental concerns, including unknown levels of asbestos and other contaminants as well as decades of pigeon waste buildup. In addition to containing visible remnants of coal and other byproducts from the plant's operations, the soil was also contaminated from radioactive tailings which bled from the drainage holes that were built into the retaining walls along U.S. 550. Lastly, the soil was compromised by a petroleum plume which extended onto the site from a nearby gas station's underground storage tanks.

Remediation efforts included physically removing the contaminated soil and hot spots from the site. Mitigation of the radioactive tailings included filling the drainage holes with pea gravel and a drainage net to filter out the tailings without compromising the drainage system. The most expensive part of the cleanup was due to asbestos in the plant's building materials. All of the remediation was made possible through grants provided through state funding.

## Get help for your project

Whether you are unsure of what a brownfield is, or you are well-versed in state and EPA brownfields programs, the Colorado Brownfields Partnership (CBP) will help you learn about leveraging brownfields assistance for your community. The CBP provides outreach and technical assistance to communities interested in redevelopment, renovation, and adaptive reuse of property. Please contact [info@cobrownfieldspartnership.org](mailto:info@cobrownfieldspartnership.org) or call 970-340-2959 for more information.