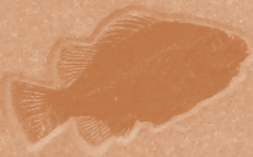




COLLEGE OF MINES AND EARTH SCIENCES

THE
FREDERICK
ALBERT
SUTTON
BUILDING







THE FREDERICK ALBERT SUTTON BUILDING

The Frederick Albert Sutton Building, dedicated 17 April, 2009, is the new home of the Department of Geology and Geophysics at the University of Utah. This building was made possible through generous philanthropic support of many individuals and organizations.

This four-story, 91,000 square foot facility features state-of-the-art classrooms, laboratories, and offices that foster collaboration and innovative research. The building is distinctive: its architectural design and educational display areas provide a magnificent showcase for discoveries in the fields of geology and geophysics and highlight the many contributions of University of Utah faculty and alumni to these fields.

Reverend Marta Sutton Weeks provided the lead gift for the project in honor of her father, Frederick Albert Sutton.





ABOUT THE MAJOR DONOR AND HER FATHER

FREDERICK ALBERT SUTTON

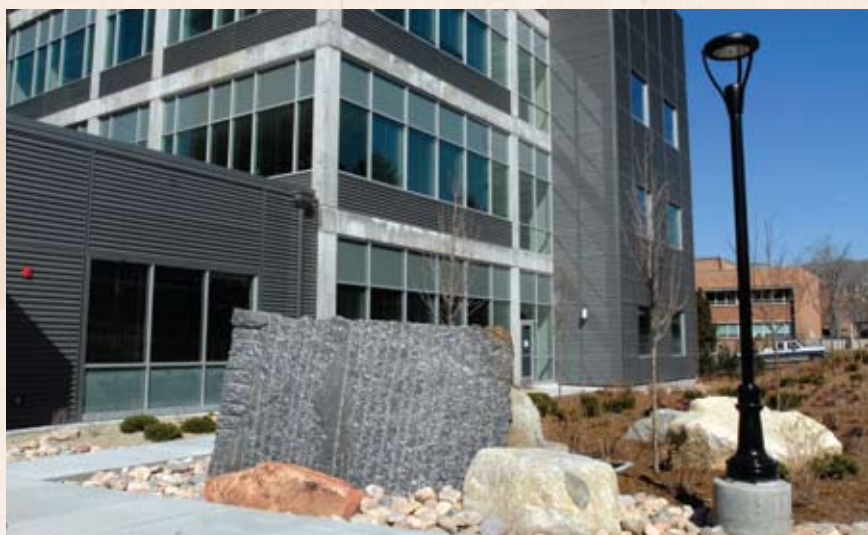
Frederick Albert Sutton (1894-1950) grew up in Salt Lake City, Utah. He attended the University of Utah, earning a Bachelor's Degree in 1917. Following World War I, he embarked on a career in oil exploration and soon married Anne Newman. His training in geology took him to South America, China and Tibet. He was an expert on the extensive Venezuelan oil-producing area of the Maracaibo Basin.

Marta Weeks remembers best her Dad as "a redheaded geologist who was warm-hearted, had a good sense of humor, and was a man who cared deeply about his family." The Sutton Building is her special tribute "thanking Dad for his hard work and the loving and good times we spent together."



REVEREND MARTA SUTTON WEEKS

Rev. Marta Sutton Weeks is the primary donor to the Sutton Building, which honors her geologist father, Frederick Albert Sutton. Marta spent her early days in Salt Lake City where she married Lewis Austin Weeks. His father was also a geologist, the founder of Weeks Petroleum Ltd. Both together and individually, the Weeks family received many accolades and recognition for their many geologic contributions and philanthropic efforts. An ordained Episcopal minister, Rev. Weeks has long reached out to others, both overseas and in her own backyard where she has planted, harvested, and delivered tons of vegetables to a Salt Lake City soup kitchen to help the homeless. Her kindness, sensitivity, intelligence, and generosity have affected many. The lecture hall is named in her honor.



ABOUT THE SUTTON BUILDING

HISTORICAL PERSPECTIVE

The Frederick Albert Sutton Building replaces the Mines Building, which was built in 1927 and sat to the west of the new facility. Although the Mines Building was considered state-of-the-art when it was built, it lacked the infrastructure necessary to support today's research technologies (elevators now required by code and a necessity for moving heavy samples and equipment).

Historic portions of the Mines Building have been saved and incorporated into the Frederick Albert Sutton Building. These items, displayed on the First Floor, include three large terra cotta "pick and hammer" medallions that graced the exterior of the Mines Building; Batchelder arts and crafts tiles from the interior of the Mines Building, and the original Mines Building cornerstone that contains photographs and mining-related memorabilia. A new 2009 time capsule has been added to that of 1927; both are incorporated into the sandstone bench near the First Floor west entrance to the Frederick Albert Sutton Building.



Mines cornerstone in new time capsule sandstone bench donated by State Stone.



Custom 1927 mines building terra cotta medallions.



NEW INNOVATIONS

The Frederick Albert Sutton Building was designed to incorporate environmentally friendly, “green” building practices; these features, and details of the building’s LEED® (Leadership in Energy and Environmental Design) certification and the environmental performance enhancements included in its design are presented throughout this publication. The new building has reinforced concrete in the foundation and walls to allow researchers to make vibration-free analytical measurements. Exposed concrete walls in the interior provide structural support against seismic ground motions. Stylized sedimentary features formed in the concrete of the north and west exterior walls of the building herald a geological theme that continues throughout.

An interdisciplinary group of students who participated in a Sustainability Practicum taught by Drs. William Johnson and Fred Montague is responsible for several of the building’s environmental performance features, including a roof garden; on-site storm water capture and recharge; xeriscaping of the surrounding landscape; installation of the energy and water metering, monitoring, and display system in the large student commons area, and the installation of tubular skylights on the top floor.



Solar light tubes.

These students researched potential enhancements and received hands-on mentoring from the architects of the Frederick Albert Sutton Building, Cooper Roberts Simonsen & Associates, staff from University of Utah Plant Operations and Environmental Safety and University of Utah faculty from the departments of Geology & Geophysics, Civil Engineering, and Biology.

Overall layout and design of the building was accomplished by Myron Richardson of Brixen-Christopher, with engineering by Cooper-Roberts-Simonsen & Associates. John and Lee Diamond of Diamond Phillips provided their creative talents and architectural and design services for the building displays. The general contractor was Gramoll Construction, with John Thompson serving as Superintendent.

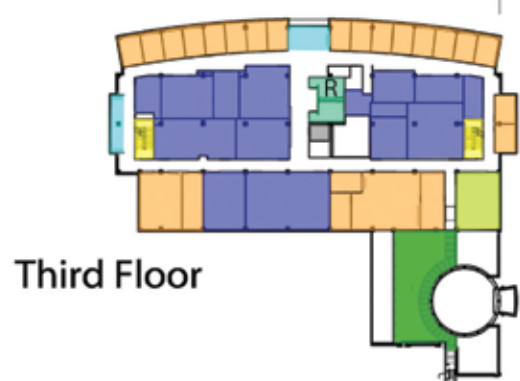
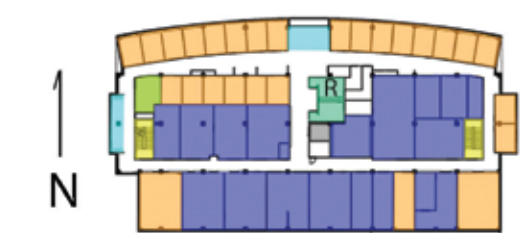
LEED® Certification: LEED (Leadership in Energy and Environmental Design) is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. The Frederick Albert Sutton Building is the first LEED-certified building on the University's main campus. Scoring levels for the rating of LEED-certified buildings include evaluation in 6 categories:

- Sustainable sites
- Water efficiency
- Energy and atmosphere
- Materials and resources
- Indoor environmental quality
- Innovation and design process

The Frederick Albert Sutton Building is designed to have an educational component that emphasizes efficient use of key resources (water and energy); whole-building design processes; environmental leadership in the building industry, and increasing consumer awareness of green building benefits. For more information on LEED certification, visit www.usgbc.org.







Legend	
	Elevator
	Stairs
	Gathering Areas
	Offices
	Laboratories / Classrooms
	Conference Rooms
	Collections / Work areas
	Lecture Hall
	Earthquake Monitoring
	Roof Garden
	Restrooms



The angled rock slab just outside the east entrance is garnet-staurolite-schist, a “quarried end piece” from the Precambrian Espinhaco Supergroup, Piripá, Bahia, Brazil and is a gift from Contempo Ceramic Tile.

THE FREDERICK ALBERT SUTTON BUILDING: A WALKING TOUR GUIDE

This guide begins with a description of the east entrance on the second floor, followed by a description of features in the confluence and in the first floor entry area. It continues by describing displays and named spaces from the first to fourth floor.

SECOND FLOOR/EAST ENTRANCE

Landscaping at the east entrance to the Frederick Albert Sutton Building is designed to merge with the rock garden in front of the William Browning Building.

A dry-river cobble bed outside the Wasatch Mountain-facing east entrance to the Frederick Albert Sutton Building extends inside the building as a sinuous stream of pebble tile. Encased in epoxy, the pebble tile stream moves westward toward the stairway where it, like the stairway, drops to the first floor. The pebble stream continues flowing westward toward the first-floor entrance where, outside the building, it once again becomes a dry-river cobble bed and continues toward the Salt Lake Valley.



The multicolored slate tiles are Precambrian (Neoproterzoic) from the Serra da Santa Helena Formation, Bambuí Group of the São Francisco Supergroup, Minas Gerais State, Brazil and are gifts from Daltile & Stone and Green Slate Mining. The river pebble tile is from China and a gift from Solistone, Inc.



Rock monoliths from Butterfield Gardens merge with the rock garden on the east side of the William Browning Building.



Confluence of the Green and Colorado Rivers in southern Utah (the right edge of the photograph faces north). Photo by geologist and professional photographer Michael Collier.

PETER B. STIFEL CONFLUENCE

In keeping with this clearly articulated river theme, the second-story rotunda at the east entrance (where the Frederick Albert Sutton Building joins the William Browning Building, home of the Departments of Metallurgical Engineering, Mining Engineering, and Atmospheric Sciences) is named ***The Peter Stifel Confluence***, in honor of the 1964 Ph.D. geology alumnus of the University of Utah.

A majestic aerial photograph of the confluence of the Green and Colorado Rivers in southern Utah, accompanied by a quote from the famed early explorer of the western U.S., John Wesley Powell, hangs near the stairway in The Peter Stifel Confluence.



"Confluence Sentinel," Canyonlands National Park, by John Collins (1987 B.F.A., University of Utah)

CANYONLANDS PAINTING

Hanging above the stairway, on the southwest wall, is "Confluence Sentinel," a large oil painting commissioned from John Collins, a Utah artist who studied fine art and design at the University of Utah. His appreciation for the natural beauty of Utah is evident in the expressive palette he chose.



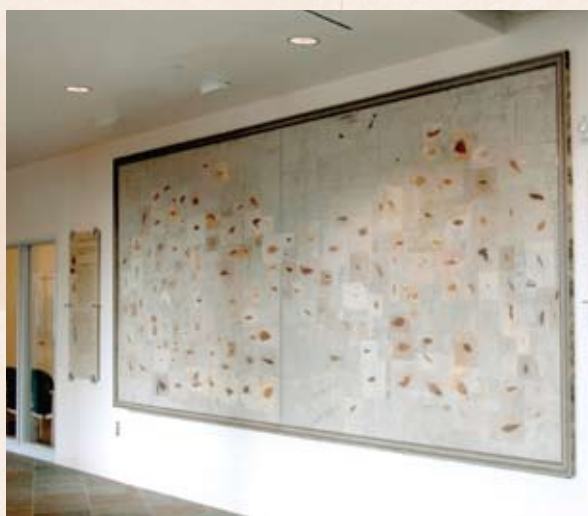
Architect John Diamond of Diamond Phillips designed the donor wall, fish display, and variation in stone colors. The fish fossils, stone pieces, and edge frame treatments are from Green River Stone Company.

DONOR FISH WALL

The Confluence is also home to a spectacular display of Eocene age Green River fish fossils—some 50 million years old—from Fossil Lake near Kemmerer, Wyoming. The fish, including *Knightia*, *Priscacara*, *Diplomystus*, and *Mioplosus* are arranged in a school; the edges of the display are framed in polished Green River “marlstone,” made of limestone and dolomite, that has been set on its edge to show laminations. Fine, organic-rich oil shale laminations provide the dark-colored stripes in the frame.

The donor listing at center of the fish wall pays lasting tribute to the individuals and organizations whose generous gifts made the construction of The Frederick Albert Sutton Building possible.





Architect John Diamond of Diamond Phillips designed the Plant Wall with over a hundred fossil leaves.

PLANT WALL

Just beyond the Fish Wall is an equally spectacular display of carbonized leaf fossils, also from the Green River Formation and ancient Fossil Lake. Because plant fossils—particularly ones that are well-preserved enough for use in scientific research—are generally quite rare, the Plant Wall is one of the best such displays in the country.

This remarkable collection of plant fossils comes from the Ulrich fossil quarries near Kemmerer, Wyoming. Lonnie Paulos, M.D. generously gave this collection to the University of Utah in honor of Carl Ulrich and Hardy, Thirza, and Steve Jenkinson. Other portions of his collection are housed within the Department of Geology & Geophysics and the Utah Museum of Natural History at the University of Utah. A portion of a large fossilized palm frond is on display in Room 383, the administrative offices of the Department of Geology & Geophysics.



Fossil palm frond (*Palmites*), Eocene Green River Formation, southwest Wyoming. A gift of Lonnie Paulos, M.D.



Example mineral specimens from Utah Museum of Natural History display.

OPEN DISPLAYS

Mineral, Fossil, and Hominid Displays (located outside the administrative offices of the College of Mines and Earth Sciences)

The Mineral Display is on loan from the Utah Museum of Natural History. The Department of Geology & Geophysics has ongoing collaborations with the museum, including outreach programs, research, and faculty appointments.

The Fossil Display features *Allosaurus fragilis*, the Utah State Fossil. This meat-eating dinosaur from the Late Jurassic Morrison Formation (ca. 150 million years ago), is abundant in the Cleveland-Lloyd Quarry in Emery County, Utah, an exceptional site for fossilized adult and juvenile samples.



Life-size cast of fossil in aircraft stainless steel. A gift of Jeff Gentry with the assistance of Jim Madsen, who provided the original plaster cast.



This display reflects the research efforts of Dr. Francis H. Brown with students and collaborators in the Omo-Turkana Basin of Kenya and Ethiopia.

The Hominid Display highlights geochronology (age dating) of sedimentary deposits that has been important in establishing the history of early man.

Australopithecus aethiopicus ("Black Skull." Cast. Excavated in 1985 at Lomekwi, Kenya; dated around 2.52 million years). It is perhaps the oldest specimen of a then new branch of man's family that became extinct about 1.4 million years ago.

Kenyanthropus platyops (Cast. Found in 1999 at Lomekwi, Kenya; dated around 3.5 million years ago). It is thought to show that two species of early man lived at the time of "Lucy" (*Australopithecus afarensis*)

Homo erectus ("Turkana Boy." Cast. Found at Nariokotome, Kenya; dated at around 1.48 million years). It is amongst the most complete skeletons of fossil man ever found.



Energy measurement and monitoring screen in the student commons area, sponsored by TerraTek, a Schlumberger Company.)

THE TERRATEK ENERGY MEASUREMENT AND MONITORING SYSTEM

The Energy Measurement and Monitoring System in the common area allows students to compare energy use in the Sutton Building with energy use by other units across campus. Raising awareness of energy and water consumption has been shown to reduce consumption; the Frederick Albert Sutton Building has been purposely designed to reduce impact on the environment, reduce the use of energy and natural resources, and lower lifecycle costs for building materials and systems.



The Harold R. Burton Foundation Roof Garden.

THE HAROLD R. BURTON FOUNDATION ROOF GARDEN

This green roof showcases the benefits of alternative roof design including:

- Increased energy efficiency: reduces energy required to regulate indoor temperature by regulating roof surface temperatures and reflecting light from green landscapes.
- Reduction of the urban heat island effect: in Utah's hot summer season, the green roof will help remove heat from the air through evapotranspiration, reducing the temperature of the roof surface and the surrounding air.
- Increased roof lifespan, and usable outdoor space.
- Reduced runoff of storm waters to treatment plants and the Great Salt Lake.

The roof garden will provide teaching opportunities and a real-life example of alternative roofing design, urban garden management on challenging surfaces, and an improved aesthetic.



FIRST FLOOR WEST ENTRANCE

RIO TINTO EARTHQUAKE INFORMATION CENTER

The Rio Tinto Earthquake Information Center, made possible by a generous gift from Utah Kennecott Copper, a subsidiary of Rio Tinto, is the state-of-the-art home of the University of Utah Seismograph Stations (UUSS)—now located, for the first time in their history, in an earthquake-resistant facility. Earthquake records have been compiled at the University of Utah for more than 100 years. The UUSS, formally established in 1966, is a group of faculty, staff, and students involved in seismic monitoring of the Intermountain West, including the Yellowstone volcanic region. Data from more than 200 regional and urban seismic stations are continuously transmitted to the UUSS network center where they are automatically processed as part of a real-time earthquake information system, operating since 2002 as part of the Advanced National Seismic System (quake.utah.edu). The Rio Tinto Earthquake Information Center advances earthquake science, awareness, and public safety. The center boasts visualization tools and electronic displays that help the public service and educational missions of the center and UUSS in interactions with public school students, news media, and the general public.

FIRST FLOOR

Besides housing the Rio Tinto Earthquake Information Center, many vital functions take place on the First Floor with its sample preparation laboratories, field equipment storage, computing facilities, and department collections. It includes one named space:

Quintin Sahratian Sample Preparation Laboratory: an integrated set of rooms for readying rocks and minerals for scientific analysis.

Window Rocks (top photo): A tall, special window display of matched “bookends” of translucent honey-banded limestone transmits the western light.



SECOND FLOOR

The Second Floor features a collection of seismic and geologic cartoons by long-time cartoonist for *The Salt Lake Tribune*, Pat Bagley, and many named spaces (in each named space there is a short write-up about the person who is honored):

Reverend Marta Sutton Weeks Lecture Hall: an 80-seat, technology “smart” classroom and lecture hall.

Vivien Jameson Conference Room: a conference room within the College offices for small meetings.

Francis H. Brown Classroom: for instruction in basic earth science courses.

Gerald W. Hohmann Electromagnetic Laboratory: dedicated to continuation of fundamental and applied studies in electromagnetic geophysics at Utah.

Michael and Margaret Kerr Seismic Imaging/Tomography Laboratory: for research into applied seismic techniques.

David A. and Hanne Duke Gathering Area: a space at the west end for informal meetings of students, faculty, and staff.

Jerry Knaus Gathering Area: a space in the center of the north hallway for informal meetings of students, faculty, and staff.



THIRD FLOOR

The Third Floor houses the Administrative Offices for the Department of Geology & Geophysics, classrooms, faculty offices, and geophysics laboratories. Named spaces include:

Ferdinand F. and Henrietta J. Hintze Paleontology and Sedimentology Teaching Laboratory: for teaching about rocks and fossils that inform our knowledge of geologic history.

Matthew P. Nackowski Ore Petrology Laboratory: to investigate ore minerals, their properties, interrelations, and genesis.

William Lee and Betty Curtis Stokes Paleontology Laboratory: for study of fossils of all kinds.

Charles R. and Cathy Williamson Sedimentary Laboratory: dedicated to the study of sedimentary rocks, basin analysis, and depositional environments.

Waldemar E. and Harriet R. Rasmussen Conference Room: a room with splendid views for faculty meetings, and other conferences as needed.

Hellmut H. and Gerda S. Doelling Gathering Area: a space in the center of the north hallway for informal meetings of students, faculty, and staff.



FOURTH FLOOR

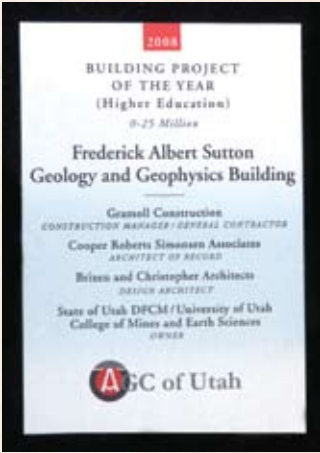
Faculty offices, and geochemical and geological engineering laboratories are located on the fourth floor. Named spaces include:

G.W. Anderson Structural Modeling/Deformation Laboratory: for study of rock deformation, and the formation of geologic structures.

Grant Parsons Map Lab and Conference Room: for examination of large maps and holding small meetings.

James A. Whelan Gathering Area (a gift from Mike and Andrea Manship): a space in the center of the north hallway for informal meetings of students, faculty, and staff.

Donald D. & Erika A. Runnels Gathering Area: a space at the west end for informal meetings of students, faculty, and staff.



THROUGHOUT THE FREDERICK ALBERT SUTTON BUILDING

ROCK DISPLAYS

Spectacular rock slabs displayed on all four floors tell about various Earth processes and come from around the world. They were given by or acquired from: Arizona Tile, Contempo Ceramic Tile, Daltile and Stone, European Marble & Granite, North Salt Lake Marble & Granite, and Western Hills. In addition, polished stone accent table tops, gifted by North Salt Lake Marble & Granite, are scattered throughout the building and tell additional geologic stories.

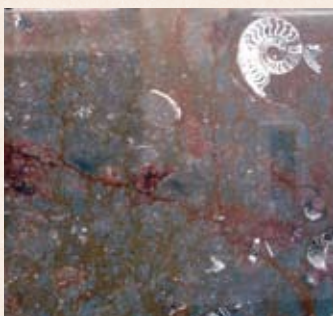
Sedimentary Rocks



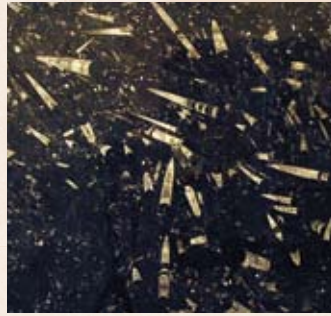
*Metaconglomerates, Precambrian, Bahia, Brazil
[3 different colors above Confluence stairway,
south wall]*



*Liesegang-banded Sandstone, Triassic Shinarump Member, Chinle Formation, Kanab, Utah
[Second floor opposite elevator]*

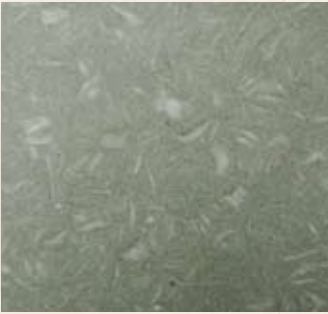


*Cephalopod Limestone, Devonian, Morocco
(goniatite ammonoids and straight orthocone nautiloids) [Third floor opposite elevator]*

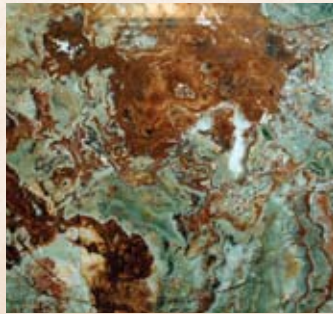


*Cephalopod Limestone, Devonian, Morocco
(straight-shelled orthocone nautiloids) [Third
floor adjacent to Department Office, Room 383]*

Sedimentary Rocks



Nummulitic Limestone, Eocene, Turkey [Third floor at west end]



Green Travertine, Pakistan [Fourth floor opposite elevator]



Fossil Trackways (Didymaulichnus), Cambrian Pioche Formation, Cricket Mountains, Millard County, Utah [Second floor opposite elevator]



Wave ripples from unknown locality [Second floor opposite elevator]

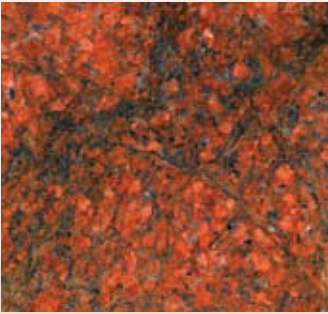


Fossil Trackways, Jurassic Nugget Sandstone, Utah [Second floor opposite elevator]

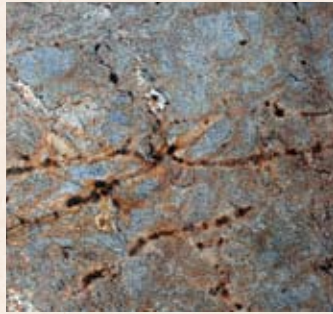


Honey-banded limestone, Iran [Window displays, first floor west entrance area]

Igneous Rocks



Red Granite, Brazil [Second floor at west end]



Granite, Brazil [Second floor opposite east stairwell]



Pillow Basalt, Cretaceous-Eocene, Espirito Santo, Brazil [Second floor opposite computer room]

Metamorphic Rocks



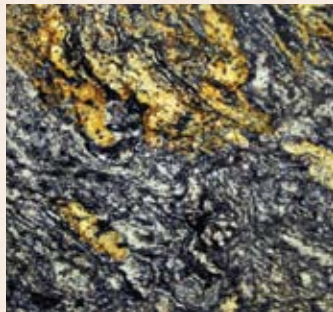
Banded Ironstone, Precambrian, Brazil [Third floor opposite east stairwell]



Migmatite, Brazil [Fourth floor west end]



Metasomatite, Proterozoic Oorlano Metasomatite, Wallaroo, South Australia [First floor base of stairway]



Garnet Biotite Gneiss, Bahia, Brazil [First floor opposite elevator]



A large, handmade, Pakistan wool rug gifted by Adib's Rug Gallery, and plants acquired from Cactus & Tropicals, add warmth to the Confluence area. Furniture from Henriksen-Butler.

ANTIQUE PALEONTOLOGY LITHOGRAPH WALL CHARTS

The large, framed teaching charts hanging throughout the building were produced by Karl Alfred Zittel (1839-1904) in the German volume "Palaeontologische Wandtafeln," Druck und Verlag Theodor Fischer, Cassel* (Printing and publisher Theodor Fischer, Cassel, 1879-1891). * now Kassel, Germany





"Out-of-this-world" meteorites are on display in the Department of Geology & Geophysics administrative office.

BEAVER-HARRISON METEORITE

The Beaver-Harrison Meteorite, found by John E. Welsh in Beaver County, Utah, is an olivine-hypersthene chondrite stony meteorite, weighing 925 grams gifted by Janet Welsh.

PAINTING OF MT. MORAN, GRAND TETON NATIONAL PARK

This handsome painting hangs in the Dean's Office reception area. It was painted by Karl Thompson (b.1948), and was donated by Terrence and Andrea Chatwin.

Many other gifts to the department not currently on display may rotate at different times to showcase the breadth of our collections.



ACKNOWLEDGMENTS

We are grateful to our major benefactor Reverend Marta Sutton Weeks and the many other individuals and organizations whose gifts made this building possible. We thank the many companies who provided in-kind gifts that greatly enhance the furnishings, displays, and special projects incorporated into this facility. We give special recognition to Department of Geology & Geophysics faculty members who dedicated tremendous time and thought into making this building a special place for future generations of students, teachers, and researchers to learn about earth science. Thank you all.

If we neglected to mention any major donor, we sincerely apologize.

Program and walking
tour guide prepared by:
Marjorie A. Chan, Chair
Dept. of Geology & Geophysics (2009).







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