

CRITICAL MATERIALS MUSEUM DISPLAY  
STATUS AND “HOW-TO” REPORT NO.2  
10-06-2015

WHAT TO CONSIDER BEFORE AND DURING  
THE ACQUISITION PROCESS

**Introduction**

The following report represents the second in a series of reports designed to provide instruction and considerations when designing and building a Critical Materials museum exhibit. The first “How-To” report, offered an overview of the exhibit project initiation and the early design and planning processes. Since this report reflects the process several months into the exhibit build, you will notice it is more instructional and reflective. Hopefully, it will guide you in making effective and efficient decisions in your own Critical Materials exhibit.

**Background**

The Critical Materials exhibit was initiated by the Outreach and Education Coordinator for the Critical Materials Institute (CMI) and the Director of the Colorado School of Mines (CSM) Geology Museum as an opportunity to leverage the relationship between CSM’s very successful museum outreach and CMI’s desire to reach audiences of all ages across the nation. The exhibit is being built to provide a visual outreach opportunity with visitors to the CSM Geology Museum. The exhibit’s design highlights Critical Materials and the national purpose of CMI within the scope of material Sources, Processes, and Products as they relate to establishing a continual supply of these materials in any period of time.

**Questions to Ask for Successful Design Build**

The following are questions that should be asked during the initial planning stages and throughout the design build. Some instruction or reflection follows each question.

**What is your purpose in the exhibit?**

An exhibit can have many purposes: to educate, to gain recognition, to inspire others, to propose questions, or to market an idea.

*In many ways, the Critical Materials exhibit was developed to express all of these purposes. In reaching a large audience through the CSM Geology Museum, the exhibit can enlighten visitors on the role of Critical Materials in their daily lives, recognize CMI as an entity*

*to those yet unaware, and explain the mission of CMI. The exhibit design aims to inspire students and all audiences to take action and to ask questions about Critical Materials.*

### **What are the ideas you want to communicate and how will you communicate them?**

Ideas can take the form of a feeling, such as a wow-factor aimed to impress the audience. Ideas can also be direct information, such as info-graphics which create a lasting image or bit of information for the audience to adsorb. The CSM Geology Museum Collections Manager, Ed Raines, reminds us that a successful exhibit is one that tells a story. Keeping in mind the story that you want to tell through your exhibit will help to solidify and clarify your communication strategy.

*The display components of the exhibit define Critical Materials, indicate where they originate, explain why they are important, and describe how they are finished and/or processed. The underlying inspiration for the exhibit is to demonstrate why seeking alternatives to the current materials and/or making the source of materials easier to process or more economical to develop can meet the needs of our highly technological world and keep all supplied. The items included in the display (minerals, chemicals, and tangible every-day objects) are organized to visually engage the audience and are enhanced by carefully chosen infographics (processing of ore, special properties of the extracted chemicals, and energy technologies) in order to communicate the story. An interactive display stand is being added to the exhibit as a way to engage the audience in direct sharing of information, to further explain the exhibit's components for those interested, and to propose the question of "What's next?".*

### **Is your exhibit permanent or temporary?**

Critical Materials are inherently likely to change throughout time as the world's economies and extraction processes grow or decline, making some materials more readily available than others. Potentially new Critical Materials are currently being analyzed for their scarcity and economic viability. That being said, it is inevitable that at least some component of a Critical Materials exhibit will be changing. If the exhibit itself is to be permanent, then it would be beneficial to navigate your resources or to find new ones that will allow for changing out display items and/or media in the future. Keeping a display current will insure continued audience interest.

### **Does the use of media and infographics enhance your display?**

An exhibit can easily inspire without the need of much additional information. However, if the purpose is to educate, then media and informative descriptors are recommended. Keep in mind and determine how much media per square inch is appropriate for the audiences you expect to reach.

For example, have you ever wandered around a museum only to become impressed by an exquisite work of art or a large dinosaur replication? Such a find only makes you want to know more, but if given too much information you quickly lose interest and want to move on to the next display. While browsing through an exhibit, a viewer can pick and choose the information they wish to take-in. Every person is different, so media and infographics must be variable and interesting. For additional great ideas, take some time to walk through different museums and become acquainted with the viewer's experience.

**Is there a definitive location for the exhibit space, and is there a possibility that the exhibit location will change over time?**

This question is especially important as you consider display cases in the design process. Are the cases already there and waiting for your display, or do you need to install new cases? Designating the exhibit location will help define the amount of space allowed and needed, and therefore guide your decision in size, number, movability and type of display cases.

Much of the design process can fluctuate and the following should be considered. The size of the exhibit and what is available to display typically are not mutually exclusive, especially for new exhibits. If the space or the display items are not already decided, be prepared and allow for a fluid acquisition and design process.

In designing new cases, one should consider whether the cases will be permanent or need to be moved in the future. If the ability to move a case is important, weight and mobility should be taken into consideration. New cases should also suit and complement the surrounding décor. If trying to utilize existing cases, upgrades in lighting, painting, and shelving can be made for relatively low costs.

*For our exhibit, the cases were designed to fit in the Colorado School of Mines Geology Museum. After some deliberation on a new case design, an area of the museum was designated for the exhibit to live. Once this decision was made, everything else in the design process was set into motion. The number and size of cases were easier to ascertain, and the look of the cases was easier to design.*

*In order to maintain flexibility in display location for years to come, a maple veneer exterior and white interior color scheme was adopted to fit the color scheme of the majority of the current cases in the museum. Additionally, we decided to use three capped pedestal cases for a modern feel and versatility. The cap facilitates proper lighting. The use of three cases distinctly mirrors the three exhibit components of Source, Process, and Product needing to be conveyed. The cases have a closed back for displaying info-graphics and shelving.*

## **Budget and Communication**

Establish a budget, taking into consideration the types of items you want to include in your exhibit. The budget scope should be presented and discussed with your team at the beginning of the project. Also include what you consider to be important to highlight in your exhibit. You want to make sure that those in charge of allocating and reallocating funds, your procurement team, and any directors of your facility or organization understand that you will be purchasing unordinary items/specimens which may be outside of your current budget scope. These materials may require new purchasing codes. Depending on how you design your exhibit, you could include minerals, chemicals, magnets, lithium batteries, and solar photovoltaic generators. Also consider display housing materials, such as museum or exhibit cases, lighting, stands, and media (posters, digital frames, and interactive displays). If you chose to use some or our entire museum plan you will already be well on your way.

## **Stretching your Dollar**

When it comes to building an impressive exhibit, stretching your dollar can be challenging. Here are some ways to reduce your budget, many of which involve making use of pre-existing resources.

## **Organizational and Team Assets**

Consider what is at your fingertips for low or no cost. If you are an educational institution, you already may have research facilities with materials, such as minerals or chemicals. Contact your laboratory directors to see if they can contribute items they have worked on or can easily acquire. You may want to interview professors and graduate students for ideas on technical matters, such as how to present solar and wind hybrid models to highlight critical materials in clean energy technologies.

If you are starting with an actual a museum, you may have display cases or items that are already in your collection waiting to be curated in a new way. Museums regularly receive donations, many of which are from repeat donors. Make use of these relationships when seeking new display items, and acknowledge any gifts received (label or plaque). If your contributors, vendors, or donors are not in a position to give, they may be willing to discount a purchase. Our exhibit has grown from many of such contributions, donations and discounts.

If you are a company, corporation, or membership organization, utilize what is within your organization, such as expertise and assets that can be highlighted for little to no cost. Reach out to your partners, clients, and vendors and remember to give recognition to those who contribute time, information, ideas, and items toward your exhibit. Hopefully, this will enhance your company relationships.

*The partnerships between CMI, CSM, and the CSM Geology Museum have created a vast network of opportunities for the Critical Materials exhibit. Researchers from CMI and CSM continue to share their ideas and give technical support for this exhibit. Member partners with*

*CMI continue to contribute ideas and donations of items for display. A company who is a strong supporter of the CSM Geology Museum recently heavily discounted a purchase of high quality mineral specimens for this exhibit. Additional minerals were purchased from mineral dealers, also at discounted prices. Many of the mineral specimens and some ore specimens that will be on display were surfaced from within the Museum's extensive collection at no cost to the project budget.*

Build a diverse team with varied expertise and backgrounds and utilize all of your team assets for your exhibit project. A creative, experienced, and resourceful team can make your exhibit outstanding without going overboard on a budget. Having team members who have a discerning eye can keep your display selection in check and of high quality without purchasing unnecessary or redundant items. A creative thinker and artist can improve the aesthetics with simple and inexpensive ideas, such as utilizing discarded media or fabrics to cover foam core bases for added dimension. When team members seek contributions from personal and professional acquaintances, the result often can be impressive and surprising. Your team members' abilities to network and generate excitement for your exhibit can quickly gain unsolicited support across organizations and agencies. Having resourceful team members with experience in Critical Materials and in building museum displays is extremely helpful for this type of exhibit. It generates credibility, and makes the design build process much easier.

### **Purchasing: Minerals, Chemicals, and Cases**

The following is a brief guide for purchasing minerals, chemical and cases. Minerals are possibly the most tricky to purchase. They are one of a kind, difficult to find, and many mineral dealers operate on cash business for immediate purchases. However, many dealers are well acquainted with museum and institutional purchases and will work with you to secure your acquisition. Of course, stay as local as you can to take advantage of any relationships you may have or can build.

#### **Minerals**

The website, <http://www.minfind.com/>, is an excellent resource for scouring the internet in search of mineral specimen.

Ask your geologist colleagues if they have minerals or ore samples which they would like to donate, loan, or sell.

Seek out gem and mineral shows. The website, <http://www.xpopress.com/>, can direct you to larger shows. Your local mineral clubs will have more information on public shows to visit or dealers to contact.

Some reputable dealers we have worked with include Collectors Edge Minerals, <http://www.collectorsedge.com/>; Crystal Classics, <http://www.crystalclassicsltd.co.uk/>; and Khyber Minerals, <http://www.khyberminerals.com/>.

## Chemicals

Fisher Scientific, <https://www.fishersci.com/us/en/home.html>, offers a plethora of chemicals and supplies.

Some other companies include HEFA Rare Earths, <http://www.baotou-rareearth.com/>, and Sigma-Aldrich, <http://www.sigmaaldrich.com/technical-service-home/product-catalog.html>.

## Cases

Blue Goose Inc. builds excellent displays, <http://www.bluegooseinc.net/>.

Kevin D. Shaw, owner of Great Circle Promotions, [www.greatcirclepromotions.com](http://www.greatcirclepromotions.com), offers support and management for trade show exhibits.

Tucson Store Fixtures sells and rents display cases, [http://www.tucsonstorefixtures.com/default.aspx?catname=Fiber%20Optic%20Display%20Cases&catid=1086&cat\\_vp=1114/1086](http://www.tucsonstorefixtures.com/default.aspx?catname=Fiber%20Optic%20Display%20Cases&catid=1086&cat_vp=1114/1086).

Dynamic Events Denver, <http://www.dynamiceventsdenver.com/>, also rents cases made by R&R Showcases, <http://www.rshowcases.com/products.html>.

Graham Sutton is an excellent contact for lighting fixtures and cases. Contact him for inquires and a price list. Email: [graham\\_s2002@yahoo.com](mailto:graham_s2002@yahoo.com) or call: (720-318-8933)