Agenda.

01 Introduction
02 Project Overview
03 Laboratory Development Summary
04 Workplace Strategy
05 Building Design
06 Discussion
Section 01.
Introduction

Contents
Colorado School of Mines
USGS
Presentation Team

Kirsten Volpi  Mines – Executive Vice President FAO
Peter Griffiths  USGS – Deputy Regional Director
Rick Holz  Mines – Provost
Julie Gauthier  Perkins and Will – Workplace Strategist
Christopher Kleingartner  Perkins and Will – Principal Architect
Section 02.

Project Overview

Contents
Project Goals
Accomplished to Date
Stakeholder Engagement
Project Goals

• Revolutionize the way earth science is done
• Collaborate between institutions and leverage expertise
• Provide immersive research opportunities for students
• Increase annual research funding
• Improve workforce pipeline
• Lead in big data, computational earth science
• Map the subsurface—”Google Earth for the Underground”
• Connect partners, become research network hub for geosciences
• Educate the public about earth science
Design and Construction Schedule Update
Stakeholder Engagement Teams

• Program Planning Team
• BAC (Building Advisory Committee)
• EBAC (Executive Building Advisory Committee)
• Lab User Groups
• Design Committee
• Workplace Strategy Teams
• Facilities Management
• Branding & Storytelling
Space Program

**PROGRAM BY ORGANIZATION**

- SHARED: 21%
- MINES: 23%
- USGS: 56%

**PROGRAM BY SPACE TYPE**

- WORKPLACE: 48%
- LABS & SUPPORT: 31%
- PUBLIC & SUPPORT: 8%
- CONFERENCE/LEARNING: 7%
- STORAGE: 6%
Section 03.

Laboratory Development Summary

Contents
Program Plan
User Group 1
Adjacency Diagrams
User Group 2
Laboratory User Workshop 2
50% DD Laboratory Review Set
Section 04.

Workplace Strategy: The Human Experience Program
**Workplace Strategy: The Human Experience Program / Design for Experience**

**Design for Experience** aims to create a dynamic and responsive environments that engage the physical, emotional, intellectual, and aspirational elements of work, research, learning & teaching by:

- Inspiring a Greater Purpose
- Sparking New Connections
- Creating Opportunities
- Promoting Well-being
People focused solutions that consider the individual, the team and the organizational community.
Stakeholder Engagement

**SITE TOURS.**
Tours of existing spaces occupied by the user groups are critical in understanding the current space conditions and baseline information.

**WORKPLACE STAKEHOLDER SURVEY.**
Gathering data directly from Stakeholders that will help inform design decisions required to create highly utilized, effective, and productive work environments for employees today and in the future.

**VISIONING SESSION.**
Brainstorming session with select group of Stakeholders that confirms the goals, objectives, and expectations not only for the project, but for the future of the organization.

**WORKPLACE OBSERVATION & SPACE UTILIZATION.**
Focused study documenting and evaluating current space conditions, function, and utilization of space, and general work patterns and practices.
Stakeholder Engagement

SITE TOURS
MINES
Stakeholder Engagement
When asked about...

Q8 When asked if...

"The current work environment supports my overall health and well-being?"

Respondents reported that they equally agree and disagree with this statement. USGS respondents disagreed that their current work environment supports personal health and well-being more than Mines respondents.

OVERALL TOTAL
45% Somewhat / Strongly Disagree
20% Neutral
35% Somewhat / Strongly Agree

Q10 When asked about...

"satisfaction with their current work environment."

Respondents reported that 56% are dissatisfied with their current work environment.

OVERALL TOTAL
56% Somewhat / Strongly Disagree
18% Neutral
36% Somewhat / Strongly Agree
Stakeholder Engagement

STAKEHOLDER SURVEY
Current Work Environment - Satisfaction

Q11 "describe your organization"

POSITIVE word associations and most popular words:
COLLABORATIVE
FOCUSED
INNOVATIVE
DEDICATED | INDEPENDENT | RESEARCH

NEGATIVE word associations and most popular words:
DISCONNECTED
DISORGANIZED
DISJOINTED & FRAGMENTED

Q15 When asked...

“During an average DAY, how many times you travel back and forth from your assigned office or workstation to your laboratory?”

Respondents reported that 60% are visiting their labs 1-2 times a day or do not work in a Technical Laboratory.

Q16 When asked...

“to outline activities on an average work day.”

Individual "heads down" work, requiring concentration: most respondents reported between 50%-90% of time is spent on the average day on focused individual work.

Scheduled meetings, requiring meeting space or technology: most respondents reported between 10%-30% of time is spent on the average day on formal scheduled collaboration.

OVERALL TOTAL
70% Focused Individual Work
10% Formal Scheduled Meetings
7% Scheduled Technology Base Meetings
9% Informal Impromptu Interactions
3% Travel
1% Other

OVERALL TOTAL
39% Don't work in Technical Laboratory
24% 1-2 Times
23% 3-7 Times
15% 8+ Times
FORWARD THINKING

Q28 Identify the most important criteria in your work environment.

70% My work environment enables me to be productive in my job.

All other responses received less than 10% of overall selection as a response.

Q29 Rate the importance of statements regarding your individual workplace:

96% “An environment that enables me to be productive in my job” was reported as VERY IMPORTANT

77% “An environment that facilitates creation of new ideas” was reported as IMPORTANT / VERY IMPORTANT

STAKEHOLDER SURVEY

COLLABORATION

Q27 Identify the most utilized communication/collaboration types:

41%+ reported weekly/monthly use of a RESERVABLE CONFERENCE ROOMS

Also ranking high with stakeholders were:
- Spaces that support brainstorming and creative work (display & white boards)
- Training Rooms
- Places you can meet with outside visitors/clients

FUTURE WORK ENVIRONMENT

Q22 When asked about TEAM & COMMUNITY... “top three most important considerations”:

1. Accessibility of colleagues with whom I work
2. Ability to have confidential conversations with colleagues
3. Awareness of what others in my group are doing

Q22 When asked about WORKPLACE ENVIRONMENT & DESIGN... “top four most important considerations”:

1. Ergonomics and comfort of the workspace
2. Acoustics/Noise & Thermal Comfort (tied)
3. Air quality/ventilation
4. Access to natural light

Q23 When asked about MOST IMPORTANT CRITERIA FOR FUTURE WORKPLACE... “top three most important considerations”:

50% Access to the right technology and tools for my group/team work
45% I have access to quiet, private spots for confidential conversations
43% A variety of spaces available that meet the needs of my different activities

Other notable answer: quiet focus individual space
Q31/32  List 3 best/worst aspects of your current work environments

**BEST ASPECTS**
- Efficient & productive working group
- Access to natural light
- Quiet
- Collaborative
- Adjacencies & proximity between office | lab support | meeting spaces
- Flexible work connectivity and options
- Ease of parking & building access

**WORST ASPECTS**
- Lack Of Natural Light
- Noise Levels
- Air Quality & Temperature Control
- Facilitating Collaboration
- Dedicated Spaces For Meetings At Various Sizes
- Ineffective Lab Spaces
- Antiquated Furniture Poor Ergonomics
- Lack Of Sample Layout/Storage
- Wifi Connectivity / Internet Network Speed
- Physically Dispersed Teams / Isolation
- Desire To Be Closer To Working Group/Team Members)
Stakeholder Engagement

VISIONING SESSION
DAY IN THE LIFE.
Activity Charting

Overall Activity Results
- 33% Focus / Heads Down Work
- 4% Social
- 11% Commute Time
- 22% Collaborate (Formal & Informal)
- 9% Lab
- 21% Other

Collaboration Activity Results
- 12% Collaborative (Formal)
- 10% Collaborative (Informal)
- 9% Lab
- 69% Other Activities (Focus/Heads Down Work, Social, Commute Time, Other)
### Stakeholder Engagement

**VISIONING SESSION**  
**WORD CONCEPT MATRIX.**  
Word Association

<table>
<thead>
<tr>
<th>ACTION / VERB</th>
<th>DESCRIPTORS / ADJECTIVES</th>
<th>SPACE CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage</td>
<td>Collaborative</td>
<td>Individual Spaces</td>
</tr>
<tr>
<td>Communicate</td>
<td>Focused / Dedicated</td>
<td>Purpose, Planned Lab Spaces</td>
</tr>
<tr>
<td>** Agile **</td>
<td>** Friendly / Inviting **</td>
<td>** Positive Atmosphere **</td>
</tr>
<tr>
<td>Mentor / Teach</td>
<td>Productive / Effective</td>
<td>Bright &amp; Open Social Zones</td>
</tr>
<tr>
<td>** Enhance **</td>
<td>** Innovative **</td>
<td>** Outdoor Shaded Space **</td>
</tr>
<tr>
<td>Experiment</td>
<td>Safe</td>
<td>** Organizational Blending of Various Disciplines in a Shared Setting **</td>
</tr>
<tr>
<td>Interact</td>
<td>Comfortable</td>
<td>Access to Natural Light &amp; Views</td>
</tr>
<tr>
<td>Blending</td>
<td>Transparent</td>
<td>Intellectual Stimulation</td>
</tr>
</tbody>
</table>
Stakeholder Engagement

VISIONING SESSION
WORK FLOW ANALYSIS.
Connection Mapping
USGS Federal Center | Building 20

First Floor
- Exits / Egress
- Main Circulation
- Secondary Circulation
- Offices
- Labs
- Support
- Collaboration Spaces
- Social Spaces
- Other

USGS Federal Center | Building 20
Second Floor
- Main Circulation
- Secondary Circulation
- Offices
- Labs
- Support
- Collaboration Spaces
- Social Spaces
- Other

Mines Campus Map
- Exits / Egress
- Main Circulation
- Secondary Circulation
- Campus Buildings
- Other
Stakeholder Engagement

VISIONING SESSION
IMAGERY
Top selections
Stakeholder Engagement

WORKPLACE OBSERVATION & SPACE UTILIZATION

Colorado School of Mines | Professors

Participant/Volunteer: Paul Sava
Role: Professor
Location: Green Center, 273
Overall Square Footage: 138 SF
Storage
Linear Inches of Shelving: 280"
Linear Inches of Filing: 60"
Other Storage: Tall Storage Cabinet

Furniture
Primary Worksurface: 10 SF
Secondary Worksurface: 14 SF
Task Seating: 1 Standard Office Chair on Casters
Guest Seating: 2 Standard Office Guest Chairs on Casters
Meeting Furniture: N/A

Other Considerations
Display Space (Y/N): No Designated Space, Poster on Wall, Large Writable Surface
Entry Door Finish & Sidelight: Wood Door, Adjacent Interior Windows w/ film
Windows (Y/N): Yes (to interior space)

Artwork, Maps, Posters, etc. Hung-up / Displayed / Applied to Wall Designated
Display Space
Writable Surface
Stakeholder Engagement

WORKPLACE OBSERVATION & SPACE UTILIZATION

USGS | Researcher
Participant/Volunteer: Andy Hunt
Role: Research Geologist
Location: Building 95
Overall Square Footage: 131 SF
Storage
Linear Inches of Shelving: 102"
Linear Inches of Filing: 140"
Other Storage: Coat Rack, Storage Cabinet
Furniture
Primary Worksurface: 17 SF
Secondary Worksurface: 20 SF
Lab Worksurface: 11 SF
Task Seating: 2 Standard Office Chair on Casters
Guest Seating: N/A
Meeting Furniture: N/A
Other Furniture: Mobile Computer Workstation
Other Considerations
Display Space (Y/N): Yes Designated Space
Entry Door Finish & Sidelight: Glass Door w/ Painted Wood Trim
Windows (Y/N): Yes

- Artwork, Maps, Posters, etc. Hung-up / Displayed / Applied to Wall Designated
- Display Space
- Writable Surface
KEY FINDINGS.

Supporting the Individual.
Focused space that supports concentration and promotes individual performance.

Supporting Working Groups.
Collaboration space that supports group interactions and team communication.

Building Social Engagement.
Community space that fosters relationships and interactions and building a community amongst users.
PLACEMAKING.
Space planning models to respond to data collected and new concept development to meet user needs while maintaining overall space requirements goals.
Planning Principals & Strategies

Office Enclaves

- Supporting Individual Activities & Functions / Strategically Locate Departments & Groups.
- Create Natural Collision Zones / Flexible and Accommodating Collaboration Space.
- Maximize Natural Light.
Planning Principals & Strategies

Resource Nodes

- Provide shared resources
- Create Natural Collision Zone / Centralize and Collocate Collaboration and Support Spaces.
- Create Public & Social Destinations.
- Maximize Natural Light.
- Flexible and Accommodating Collaboration Space.
Collaboration Hubs

- Unassigned meeting spaces of various
- Flexible and Accommodating Collaboration
  Space.
- Create Natural Collision Zones / Centralize
  and Collocate Collaboration and Support
  Spaces
- Acoustical & Visual Zoning / Maximize
  Natural Light.
- Create Public & Social Destinations
Planning Principals & Strategies

Social Spaces

- Create Public & Social Destinations.
- Acoustical & Visual Zoning/ Create Natural Collision Zones.
- Flexible and Accommodating Collaboration Space.
Planning Strategies

Separate Workplace from Labs / Maximize Natural Light

a. Office Enclaves
   - Supporting Individual Activities & Functions
   - Strategically Locate Departments & Groups
   - Acoustical & Visual Zoning
   - Individual User Comfort
   - Modularity

b. Resource Node
   - Create Natural Collision Zone
   - Centralize and Collocate Collaboration and Support Spaces

c. Collaboration Hub
   - Flexible and Accommodating Collaboration Space
   - Create Natural Collision Zones
   - Create Public & Social Destinations
   - Centralize and Collocate Collaboration and Support Spaces
   - Acoustical & Visual Zoning

d. Social Spaces
   - Create Public & Social Destinations
   - Acoustical & Visual Zoning
   - Create Natural Collision Zones
   - Flexible and Accommodating Collaboration Space
   - Maximize Natural Light

1. Create Collision Zones / Flexible and Accommodating Collaboration Space
2. Create Public & Social Destinations / Flexible and Accommodating Collaboration Space

Planning Diagrams

Strategy Implementation

Floor Plan | Level 1.5 - Mezzanine

1" = 30'-0"

*FLOOR PLANS FROM SCHEMATIC DESIGN ISSUANCE 08.28.2019
Planning Strategies
Separate Workplace from Labs / Maximize Natural Light

a. Office Enclaves
   Supporting Individual Activities & Functions
   Strategically Locate Departments & Groups
   Acoustical & Visual Zoning
   Individual User Comfort
   Modularity

b. Resource Node
   Create Natural Collision Zones
   Centralize and Collocate Collaboration and Support Spaces

c. Collaboration Hub
   Flexible and Accommodating Collaboration Space
   Create Natural Collision Zones
   Create Public & Social Destinations
   Centralize and Collocate Collaboration and Support Spaces
   Acoustical & Visual Zoning

d. Social Spaces
   Create Public & Social Destinations
   Acoustical & Visual Zoning
   Create Natural Collision Zones
   Flexible and Accommodating Collaboration Space
   Maximize Natural Light

1. Create Collision Zones / Flexible and Accommodating Collaboration Space
2. Create Public & Social Destinations / Flexible and Accommodating Collaboration Space
Section 05.
Building Design

Contents
Site Plan and Massing
Architecture Strategy Implementation
Concept Inspiration
GEOLOGIC CROSS SECTION OF GOLDEN

THE FRONT RANGE UPLIFT

GOLDEN FAULT LINE

THE DENVER BASIN
Golden Fault Overlay
Morphology
Concept Inspiration
Morphology

SINGULAR BLOCK

SPLIT INTO 2 BARS

TECHTONIC SHIFTING PLATES

SLOT CANYON ATRIUM

SLOT CANYON ARTICULATION

NATURAL ROCK FACE

VOID

MAN MADE

CANYON TRAIL W. OVERLOOKS

FINALIZE MASSING
East Perspective
Cafe
Auditorium / Banquet
Subsurface Atrium
Subsurface Atrium
Section 06.

Discussion
Design and Construction Schedule Update