



UCSF School of Medicine
**Workplace
Research Study**
Mission Hall

Final Report
March 2017



UCSF School of Medicine

Workplace
Research Study
Mission Hall

Final Report

Question.
discover.



Contents

Executive Summary	10
Abstract	11
Project History	13
Participant Types	15
Facilities Types	15
Findings	16
Study Limitations	20
Recommendations	21
Background	26
Guiding Principles & Research Mission	27
Study Design	28
Literature Review	32
Findings	48
Overview	49
Faculty and Staff Typologies	49
Site Tour Summaries	52
Benchmarks	60
Interviews / Focus Groups / Survey	70
Survey Results	110
Time Utilization Study	136
Occupancy Analysis	144
Summary of Indicators	147
Summary	148
Summary Indicators	149
Recommendations	150
Recommended Future Study	155

The Team

Research Team

Dr. Nancy Adler, Principal Investigator

Dr. Janice Barnes, Principal, Perkins+Will

Dr. Jean Wineman, University of Michigan, Taubman College of Architecture and Urban Planning

Dr. John Peponis, Georgia Institute of Technology

Dr. Lindsay Graham, University of California Berkeley, Center for the Built Environment

Project Sponsors

Dr. Bruce Wintroub

Bonnie Maler

Michael Bade

Project Steering Committee

Dr. Bruce Wintroub

Bonnie Maler

Dr. Nancy Adler

Dr. David Teitel

Dr. Bob Hiatt

Michael Bade

Lori Yamauchi

Perkins+Will Additional Team Members

Kristina Buller, LEED Green Associate

Sarah Christensen, LEED AP ND

Dr. John Haymaker

Joo Young Ro, LEED Green Associate

Brad Rogers, LEED AP BD+C

Glossary of Terms

ABW	Activity-Based Workplace
CBE	Center for the Built Environment
CDC	Center for Disease Control (A primary source of grant funding)
CHRP	California HIV/AIDS Research Program (A primary source of grant funding)
HERSA	Health Resources and Services Administration (A primary source of grant funding)
HIPAA	Health Insurance Portability and Accountability Act
IRB	Institutional Review Board
NIH	National Institute of Health (A primary source of grant funding)
NSF	Net Square Feet
R&D	Research and development
SoM	School of Medicine
UCSF	University of California, San Francisco
USF	Usable Square Feet
WHO	World Health Organization (A primary source of grant funding)

Figures

- Figure 01** Summary of Interviews and Focus Groups p.29
- Figure 02** Map of UCSF locations in San Francisco (Source: UCSF) p.53
- Figure 03** Space Composition Scheme indicating how space types are counted p.61
- Figure 04** Comparison of space allocation (% of assigned space) for all workspace types. p.63
- Figure 05** Comparison chart showing the space per person (SF) for all workspace types. p.63
- Figure 06** Average floor size (SF) for benchmark comparisons p.64
- Figure 07** Analysis of Beth Israel Deaconess Medical Center p.66
- Figure 08** Analysis of Seattle Children's Hospital p.66
- Figure 09** Analysis of UC80 p.67
- Figure 10** Analysis of UCSF Mission Hall Floor 4 p.67
- Figure 11** Diagram of typical floor circulation and sound zoning at Mission Hall p.82
- Figure 12** Town Center pantry/restroom route at Mission Hall p.82
- Figure 13** Copy Center path at Mission Hall p.83
- Figure 14** Town Center and Breakout Area adjacent to workspaces p.84
- Figure 15** Huddle Room directly behind workstation p.84
- Figure 17** Focus Room diagram p.84
- Figure 16** Diagram of proximity of Focus Rooms to workstations p.84
- Figure 18** Example of corridor that terminates in a direct view of an individual's monitor. p.96
- Figure 19** Breakout Area adjacent to workstations p.99
- Figure 20** Survey results on Satisfaction with Building (All participants) p.116
- Figure 21** Survey results on Satisfaction with Building (Faculty only) p.116
- Figure 22** Survey results on Satisfaction with Individual Workspace (All participants) p.118
- Figure 23** Survey results on Satisfaction with Individual Workspace (Faculty only) p.118
- Figure 24** Survey results on Satisfaction with Collaboration (All participants) p.120
- Figure 25** Survey results on Satisfaction with Collaboration (Faculty only) p.120
- Figure 26** Survey results on Satisfaction with Support Space (All participants) p.122

Figure 27	Survey results on Satisfaction with Support Space (Faculty only)	p.122
Figure 28	Survey results on Personal Well-Being (All participants)	p.124
Figure 29	Survey results on Personal Well-Being (Faculty only)	p.124
Figure 30	Survey results on Work Effectiveness (All participants)	p.126
Figure 31	Survey results on Work Effectiveness (Faculty only)	p.126
Figure 32	Survey results on Work Effectiveness – Individual (All participants)	p.128
Figure 33	Survey results on Work Effectiveness – Individual (Faculty only)	p.128
Figure 34	Survey results on Work Effectiveness – Group (All participants)	p.130
Figure 35	Survey results on Work Effectiveness – Group (Faculty only)	p.130
Figure 36	Survey results on Engagement (All participants)	p.132
Figure 37	Survey results on Engagement (Faculty only)	p.132
Figure 38	Relationship Diagram – How environmental factors affect perceived Satisfaction with Individual Workspace, Personal Well-Being, Individual and Group Work Effectiveness, and Engagement.	p.135
Figure 39	Example Heat Map Floor Plan showing areas of high and low occupancy*	p.136
Figure 40	Total population observed in the building by date and time	p.137
Figure 41	Total building occupancy by space types in the April/May study	p.138
Figure 42	Total building occupancy by space types in the October/November study	p.139
Figure 43	Resource Utilization Summary in the April/May study	p.140
Figure 44	Average Occupant Distribution by Location in the April/May Study	p.140
Figure 45	Resource Utilization Summary in the October/November study	p.141
Figure 46	Average Occupant Distribution by Location in the October/November Study	p.141
Figure 47	Common Space Utilization Summary	p.143
Figure 48	Mean occupancy (in number of observations) by job type	p.145
Figure 49	Job type occupancy percentage on available sample	p.145

1

WORKPLACE RESEARCH STUDY

Executive Summary



IN THIS CHAPTER

- ▶ Abstract
- ▶ Project History
- ▶ Participant Types
- ▶ Facilities Types
- ▶ Findings
- ▶ Study Limitations
- ▶ Recommendations

In an era of immense challenges to higher education this Workplace Research study will examine the use of an alternative strategy in the academic workplace. The purpose of this study is to understand how the alternative workplace strategy impacts Satisfaction, Well-Being, Work Effectiveness and Engagement.

Abstract



The Mission Hall Workplace Research project included multiple tactics to capture feedback on Satisfaction, Well-Being, Work Effectiveness and Engagement.

All Faculty and Staff who were assigned space in Mission Hall were invited to participate in the interviews and focus groups and to complete the online survey. Of the 1213 potential participants, 230 chose to participate in the interviews and focus groups and 585 chose to participate in the survey.

For site observations, a representative sample of the facilities that the Mission Hall occupants would be moving from, and the Mission Hall facility prior to and post occupancy were used. For the time utilization study, floors 1-7 of Mission Hall were used to capture occupancy patterns across the building.

The results were unambiguously negative on the four major indicators (Satisfaction, Well-Being, Work Effectiveness and Engagement). While Faculty and Staff generally agreed on the source of the issues, Faculty negativity frequently exceeded Staff by ¼ point on a 7-point scale.

In terms of Satisfaction, results show respondents have:

- Lowered attendance as a result of needing to work elsewhere to be effective
- Lowered attendance due to increased commute times
- Decreased optimism about the future
- Increased concern about recruitment/retention given the work environment
- Experienced less respect between colleagues as evidenced by many behavioral issues arising



2X more respondents feel dissatisfied with their personal workspace, compared to the number of those who feel satisfied.

In terms of Well-Being, results show respondents have:

- Perceived lack of control of thermal, lighting, technology systems and resulting discomfort
- Less group identity
- Poorer building maintenance and less comfortable furniture
- Greater commute times, less transportation options and the ongoing need to connect to the various UCSF locations
- Less nearby development and therefore less amenities
- Increased time to access the clinic [as it isn't nearby] which results in less use of Mission Hall
- Improved views and public spaces



3X more respondents report that they feel their sense of personal well-being got worse in their current workplace, compared to the number of those who feel it got better.

In terms of Work Effectiveness, results show respondents have:

- Increased distractions that negatively impact their productivity (aural and visual)
- Reduced privacy and increased HIPAA concerns (Confidentiality, Conversation, Visual Privacy)
- Decreased interactions between colleagues due to need to reduce distractions
- Limited personal technology and limited training for building technologies resulting in extra work to use the spaces provided
- Limited storage for their research materials
- Limited wayfinding resulting in lost time in finding another person



7X more respondents report that their personal workspace interferes with individual work effectiveness, compared to the number of those who feel it enhances effectiveness. Visual privacy, noise, and sound privacy elicit the greatest amount of dissatisfaction, with negative responses to sound privacy exceeding positive ones by a factor of more than 20.

In terms of Engagement, results show respondents have:

- Are frustrated by the overall process
- Feel undervalued by UCSF
- Work elsewhere and in turn have less departmental connectivity



Respondents continue to feel engaged by UCSF, but Faculty in particular feel less valued by the University and feel they are less likely to stay at UCSF.

Abstract, continued...

ADJUSTMENTS IN PROCESS

To address the deficiencies of Mission Hall and to successfully develop alternate open plan designs for future buildings, Chancellor Hawgood established the Open Plan Workspace Governance Task Force, to develop principles for programming, designing, governing, and occupying open plan workplace environments at UCSF.

The Task Force developed principles in the following areas:

- Physical Layout
- Allocation of Workspaces and Support Spaces
- Environmental Features
- Technology
- Building-wide Governance

Each of these is further described in Chapter 4: Summary.

The Task Force concurs with the preliminary findings of the Mission Hall Workplace Research Study that there are major deficiencies in the building, which need to be addressed to enhance functionality and utilization. The Task Force strongly recommends that immediate interventions be taken to correct the deficiencies, which could be in the form of governance, communication/training, non-capital improvements and capital improvements, and that longer term improvements, including capital improvements, be undertaken as soon as is reasonably possible, and well underway within one year after the acceptance of the Task Force's report and recommendations by the UCSF Space Development Committee. For further information see the Open Plan Workspace Governance Task Force Draft Report, January 2016.

Project History

In the Fall of 2010, the University of California San Francisco [UCSF] was in the midst of a series of real estate investments to support development of its new \$1.5 Billion hospital at Mission Bay as well as a School of Medicine (SoM) academic workplace building called Mission Hall.

Early planning for Mission Hall identified a need for 1200 workplaces in the academic office building that would support the new hospital. While developing the solution, the headcount increased at Mission Hall to 1500, a 25% increase over the planned occupancy, due to a number of factors, mostly program expansion. However, the budget for Mission Hall was unable to change due to the financial pressure of the hospital development running in parallel. This left the Mission Hall project with a significant dilemma: how to accommodate a 25% increase in headcount while maintaining budget and building area as previously established.

To address this challenge, the UCSF Capital Program's Mission Hall team explored four scenarios in which the combination of offices and workstations were treated as variables against construction costs. These were referred to as: **Traditional, Semi-traditional, Hybrid and Activity-Based Workplace.** **Traditional** followed the typical Faculty office/Staff workstation model while the subsequent scenarios adjusted ratios of office:workstation with decreasing numbers of offices. **Activity-Based Workplace** was the opposite end of the spectrum, including no offices for Faculty or Staff, while providing for privacy through the provision of many Focus Rooms (a ratio of 1 Focus Room for every 4 workstations).

Each scenario attempted to balance the headcount [in either offices or workstations] and support space [such as the classrooms and the office support of pantry and conference] demand against the budget. After significant analysis and test-fitting, the team realized that the only model that allowed for the budget to be met while providing space for the 1500 occupants was the **Activity-Based Workplace.**

Activity-Based Workplace (ABW)

ABW presents occupants with an array of different workplaces that they may use in accordance with their workday needs. This is different from traditional academic work environments that provide primarily singular private offices for Faculty and workstations for Staff. ABW also allows one to choose to work in multiple types of spaces across the course of a work

day. These choices allow the occupant to determine what type of environment works best for the task at hand, and, also to choose the environment that best supports the next task. Variety of settings and technology integration are core components of this workplace strategy.

ABW assumes that the variety of settings provided will align with the variety of work needs of occupants. The risk inherent in this assumption is whether there is actual alignment between the settings and the work needs.

Mission Hall ABW

In Mission Hall, occupants have a home base at their dedicated (assigned) workstation and also the following spaces available to meet their needs for specific work and social activities:

- The individual workstation provides dedicated work space with secure storage.
- Focus Rooms are available, with no need to reserve in advance, for private phone conversations, one on one discussions, conference calls and creative activities requiring privacy.
- Huddle Rooms are available for small groups (3-4), with no need to reserve in advance, to meet in an exchange of ideas, meetings, video conferencing, team grant writing, etc.
- Small and large Conference Rooms are available for reservation.



Activity-Based Workplace in Mission Hall

- Town Centers provide interconnected floors and programmatic units with a social space and kitchen.
- Breakout Areas provide opportunities to work or relax in a different setting, alone or with others, not far from one's workstation.

The ABW model flips the traditional office model by making the open workstations the quiet space (as in a library). Enclosed spaces and Town Centers become the places for conversation as well as privacy.

Clusters of open workstations are sized into neighborhoods that include Huddle Rooms (1 for every 20 users), Focus Rooms (1 for every 4 users), small Conference Rooms, large Conference Rooms, Touchdown (or Hotel) Spaces, shared Breakout Areas and Multi-purpose Areas to promote collaboration and instill a sense of community. The layout by neighborhood allows the various departments and programs accommodated in Mission Hall to be identified by area.

ABW offers these varieties of spaces for Faculty and Staff to use. The question is whether this variety supports, or doesn't support, the work that they need to do when at Mission Hall, or more broadly, whether this approach is appropriate for future workplace development at UCSF, thus the need for this study.

Activity-Based Workplace and Academic Institutions

When UCSF decided its approach to Mission Hall, ABW was not an established framework within academic circles. While its principles were familiar for many years in corporate officing globally, it had yet to be substantively tested within an academic setting. *[Note that not all ABW environments are officeless.]* Therefore, Mission Hall represents both a test for the School of Medicine, but also a model that the global academic community is closely watching.

Across the world, academic institutions increasingly struggle to finance traditional academic workplaces of Faculty offices and Staff workstations. In highly competitive real estate markets like San Francisco, this is further exacerbated by the upward pressure on rent and the cost of construction. As a result of this increasing pressure, the Mission Hall workplace is symbolic of challenges faced by most academic institutions and is the first project in a transformation that UCSF must tackle to improve its costs for development. The economic expansion that drove the increased headcount for Mission Hall will likely continue.

Therefore in addition to the research evaluation, it is also imperative the UCSF consider alternative modeling for growth as well as the management of space requirements over time. While ABW as implemented may, or may not, be the optimal solution for future development, UCSF has made a strategic decision to identify cost- and space-efficient alternatives to the traditional approach to building academic work environments.

Importantly, UCSF recognizes that these types of changes to academic work environments require evaluation and finer tuning. It is not sufficient to develop a design solution that differs so much from the traditional academic workplace. It is necessary to examine its impacts and prepare to adjust future solutions accordingly. As a research university, UCSF holds the responsibility to both evaluate the effectiveness of ABW for its own Faculty and Staff, but also to offer guidance to the global academic community.

For UCSF, the research study demand for Mission Hall was initially driven by requests from the Academic Senate. The Academic Senate at the behest of SoM Faculty, who were distressed by this new approach to work environments and the lack of engagement in decision-making, expressed concern about whether Mission Hall would support the work of those assigned there.

Recognizing the Faculty concerns, the Capital Program team in collaboration with the School of Medicine acknowledged the importance of proper research on this new precedent. To that end, UCSF engaged an independent research team (hereafter 'the team') to evaluate Mission Hall in terms of its ability to support Faculty and Staff and their work needs.

This research project is focused on whether Activity-Based Workplace is an effective solution for academic medical school workplaces generally. To do so, it uses the indicators of Satisfaction, Well-Being, Work Effectiveness and Engagement as proxies for determining effectiveness of the solution.

Participant Types

The participants in this research study included Faculty and Staff and represented four categories of occupants: Research and Clinical Faculty and Research and Clinical Staff.

Research Faculty, such as those from Global Health and Epidemiology/Biostatistics, tend to spend more time focused on the development of research grant applications, publication and teaching.

Clinical Faculty by comparison tend to spend more time in the clinic or hospital.

The respective Staff that support each Faculty type tended to follow the patterns of the Faculty type.

Residents/Fellows/Post Doctoral Students were engaged in the post occupancy feedback as well. Depending on their appointment, these groups were associated with Research or Clinical domains.

Further detail on the participants is found in Chapter 2: Background.

Facilities Types

These participants came from a variety of facilities across the UCSF campus. All facilities appeared to fit into two categories: Academic Office Space and Combined Office/Clinical/Hospital Space.

The Academic Office spaces lacked, for the most part, any specialty spaces such as clinics or patient service areas. These spaces were most often composed of traditional Faculty offices with perimeter exposure, internally located workstations for Staff, small pantries and minimal conference space. There were few if any community spaces provided in these facilities.

Existing UCSF Combined Space typically referred to office suites in buildings with clinics and patient services nearby. In addition to the space types above, these spaces often were further arranged in suites to separate them from the core clinical functions most often located nearby.

Both space types tended to have limited efficiencies in layout, limited technology integration, limited thermal comfort and limited ability to enable connections among Faculty and Staff. All offered private offices for Faculty.

In the preoccupancy study, participants were for the most part, responding to either their previous work environments or projecting about their future work environment in Mission Hall. Following occupancy, participants responded only about Mission Hall.

Further detail on evaluation of the pre-move facilities as well as the responses to Mission Hall is found in Chapter 2: Background and Chapter 3: Findings respectively.

Findings

Findings were grouped into the four assessment indicators of the Workplace Research Study: Satisfaction, Well-Being, Work Effectiveness, and Engagement. The summary of each indicator is included below and the details supporting that summary are found in Chapter 3: Findings.



Satisfaction

Satisfaction refers to participants degree of personal satisfaction and includes issues reflecting their morale.

Research results show the number of respondents dissatisfied with the new building overall and their individual workspace far exceeds (nearly double or more) the numbers that are satisfied.

Visual privacy, noise, and sound privacy elicit the greatest amount of dissatisfaction, with negative responses to sound privacy exceeding positive ones by a factor of more than 20.

The survey results indicated that respondents spend less time working each week in Mission Hall than they did in previous individual workspaces and spend twice as much time in their home office than they did in previous workspace locations.

Dissatisfaction regarding communications in the office, or feelings of connectedness, are not as pronounced. The ease of interaction with co-workers showed slightly more positive evaluations, while feeling connected to people in the workplace was evaluated as slightly worse.

The move to Mission Hall is associated with some satisfaction with support spaces. This is the only issue about which the number of positive responses exceeds the number of negative responses, particularly relative to Conference Rooms and Huddle Rooms.

The key issues identified fall into the following categories.

- Attendance
- Optimism
- Recruitment/Retention
- Respect/Disrespect
- Resistance/Resignation
- Apprehension

- Communications

Each of these is explained in Chapter 3: Findings.



Well-Being

Well-Being refers to participants comfort between themselves and their physical and organizational environment.

Participants described numerous issues that negatively impacted their well-being. In the survey, the number of people who feel that their personal well-being got worse far exceeds the numbers that see improvement (by a factor of more than 3).

The key issues identified fall into the following categories.

- Control
- Facility Conditions / Building Maintenance
- Facility Location
- Access to Clinic or Hospital
- Neighborhood Character
- Spatial Quality
- Spatial Organization
- Space Efficiency
- Shared Offices
- Furniture / Ergonomics
- Lighting
- Views
- Public Space
- Amenities
- Transportation
- Campus Connectivity
- Culture
- Generations and Perception
- Group Identity

- Preferred Adjacencies
- Wayfinding

Each of these is explained in Chapter 3: Findings.



Work Effectiveness

Work Effectiveness refers to the ability of participants to do their work within the work environment.

The majority of participants expressed concern about their ability to work effectively within Mission Hall. Visual and aural distractions and lack of privacy were frequently cited as negatively impacting effectiveness. Most noted that they come into the office far less often than previously, and have found they must work elsewhere in order to be productive.

They also noted technology challenges that hamper their ability to take advantage of the new work environments and described time-intensive workarounds to compensate for the lack of proper technology.

Anecdotally participants described reduced effectiveness at work. They also listed ways in which they are altering their work processes in order to try to compensate for the impact of Mission Hall.

The number of respondents who feel their personal workspace interferes with their individual work effectiveness far exceeds those that feel it enhances effectiveness (by a factor of more than 7). Although most respondents also thought their workspace interferes with their ability to work effectively with others, responses were somewhat less negative.

The key issues identified fall into the following categories.

- Distraction
- Privacy (Confidentiality, General Conversations, Visual Privacy)
- Productivity
- Facility Use
- Administrative Burden

- Interactions between Colleagues (Isolation, Informal Interactions, Formal Meetings, Collaboration)
- Sound (Noise Generation, Noise Management)
- Technology (Laptops/PC Dependency, Telephone Use, Wi-Fi, Printers, Technology Support, Conference Room/ Classroom Technology, Consistency, Conference Rooms Microphones, Training, Room Scheduling Software, Mobile Work Tools)
- Storage

Each of these is explained in Chapter 3: Findings.

Measures of effectiveness require longer term evaluation. As part of this study, the team therefore asked participants to identify key performance measures for subsequent evaluation. These are included in Chapter 4: Summary.

Findings, continued...



Engagement

Engagement is the level of enthusiasm/emotional commitment that an employee has to an organization and its values/goals.

Participants described a series of ongoing issues at Mission Hall that contribute to decreasing levels of engagement from Faculty and to a lesser degree, from Staff. These included growing concerns about the ability to work at Mission Hall due to noise and distractions, the apparent low utilization of the building as a whole, the ongoing challenges with technologies and the overwhelming sense that the University was doing little to improve the situation.

People continue to feel engaged with UCSF after moving to Mission Hall, even though the number of people feeling engagement got worse exceeds those feeling it got better. However, Faculty in particular feel less valued by the University and feel they are less likely to stay at UCSF.

Participants described ways in which they were changing their work processes or their work environment to compensate for apparent shortcomings at Mission Hall. One example focused on working from elsewhere as often as possible which in turn meant structuring Mission Hall work days to focus on meetings with others. Individual work was increasingly conducted elsewhere. Where possible, Clinicians found space at the clinic or hospital to do their work. A second example included a department repurposing spaces/making investments at Mission Hall in order to adapt the environment to the ways that the department needed it to work.

Participants continued to voice dismay at the lack of communication from the University as well as the lack of response to the requests for improvements, particularly in the area of technology support. Also issues such as building maintenance require their time which in turn reduces their capacity to be more engaged with the SoM.

While participant response varied from resignation to the situation and disappointment in the University to more emotionally distraught disengagement and consideration of

alternatives to remaining at the University, a commonly shared issue was the dismay at the limited response from the University to date.

The key issues identified fall into the following categories.

- Process Awareness
- Comparative Cases
- Move Management and Communication
- Building Use Protocols
- Adaptations
- Working Elsewhere

Each of these is explained in Chapter 3: Findings.

Survey Findings

The Mission Hall survey received 585 responses at its maximum response rate. This represents less than 1/2 of the 1213 people assigned to the building at the time of the study.

Faculty represented 30% of the 585 responses. Administrative Staff comprised 26% and Research Staff comprised 22%. The remainder included various Staff, Resident/Post Doc, Nurse Practitioner/Clinician and other positions.

Key Takeaways:

- Mission Hall occupancy is characterized by varying levels of dissatisfaction. Dissatisfaction is strongest regarding self-assessment of workspace conditions for individual work and less strong regarding the assessment of workspace support for group activities.
- Survey results provide unambiguous evidence that the move to Mission Hall has been experienced and assessed in negative terms by individuals. In fact, negative responses dominate responses to questions about individual productivity, well-being, and satisfaction with the workplace.
- The number of respondents who felt their personal workspace interferes with their individual work effectiveness far exceeds those that felt it enhanced effectiveness (by a factor of more than 7). Although most respondents also thought their workspace interferes with their ability to work effectively with others, responses were somewhat less negative.
- The number of people who feel that their personal well-being got worse far exceeds the numbers that see improvement (by a factor of more than 3).
- The number of people dissatisfied with the new building overall and their individual workspace far exceeds (nearly double or more) the numbers that feel satisfied.
- However, it is also clear that the levels of dissatisfaction with group productivity are not as pronounced. The numbers of negative responses still exceed the numbers of positive responses, but by lower factors. Thus, the distinction between responses to individual level variables and responses to variables referring to group work is a matter of lesser dissatisfaction.
- The number of people that see group productivity worsening at Mission Hall is slightly higher than the number that see improvement. Those that see no change are sometimes the largest group.
- People continue to feel engaged with UCSF after moving to Mission Hall, even though for most aspects of engagement the number of people feeling engaged has gone down. Dissatisfaction is more pronounced regarding feeling valued by UCSF.
- Dissatisfaction regarding communications in the office, or feelings of connectedness, is not as pronounced. The ease of interaction with co-workers showed slightly more positive evaluations, while feeling connected to people in the workplace was evaluated as slightly worse.
- The move to Mission Hall is associated with some satisfaction with support spaces. This is the only issue about which the number of positive responses exceeds the number of negative responses, particularly relative to Conference Rooms and Huddle Rooms.

Against the above background the team looked more closely at the evaluation of the work environment.

- Visual privacy, noise, and sound privacy elicit the greatest amount of dissatisfaction, with negative responses to sound privacy exceeding positive ones by a factor of more than 20. On the other hand some level of satisfaction is asserted regarding the provision of equipment at the workplace.

Given the level of dissatisfaction, the team then asked whether the responses to the survey provide any evidence about the specific factors of environment that are responsible for negative outcomes.

- The perceived lack of visual privacy and the perceived lack of sound privacy are significantly correlated with feeling that individual productivity and work effectiveness were worse at Mission Hall than at the previous workplace.
- Results show that an increase in visual and auditory privacy is expected to positively influence individuals' perceptions of individual work effectiveness, group work effectiveness, personal well-being, engagement, and satisfaction with individual workspace.

Findings, continued...

- Negative feelings about work effectiveness were particularly significant for Faculty (both Research and Clinical Faculty) and negative perceptions were stronger for those who have worked at UCSF longer.
- Feeling personal well-being was worse was more pronounced for those participants who have worked at UCSF longer. For Staff, perceptions of well-being were better at Mission Hall, than for other job types.
- Feelings of engagement with UCSF were strongly associated with visual and auditory privacy. Negative feelings about engagement were particularly significant for Faculty (both Research and Clinical Faculty) and negative perceptions were stronger for those who have worked at UCSF longer.

Given dissatisfaction with visual and auditory privacy, and given the effects that this seems to have on productivity, the team looked at the factors associated with these.

- The factors most often cited in relation to the perception of poor visual privacy are:
 - Density
 - The low height of partitions
 - The number of people walking by the work area
- The factors most often associated with auditory privacy are:
 - The number of people talking
 - The number of people thought to overhear one's own conversations

Given the relationship between dissatisfaction and environmental factors, namely the perception of poor visual and auditory privacy, the team asked whether specific factors regarding the location of one's workspace in the layout were associated with negative assessments of performance or environment.

- The team found evidence that proximity to main corridors worsens the assessment of visual privacy.
- The team also found that proximity to corridors or to Focus and Huddle Rooms reduced satisfaction with auditory privacy.

Further detail on these responses and the comparative descriptive statistics are included in Chapter 3: Findings.

Study Limitations

This research has limitations. These include the timing of the study in the larger schedule of the project for Mission Hall, the inability to deploy a pre occupancy survey, the delayed timing of a post occupancy survey and the lack of ability to tie the time utilization and survey data together.

Timing

Ideally, the research study would have occurred prior to the design of Mission Hall. In the best of all situations, the research outcomes inform design decision-making, set guiding principles and identify success metrics. In the post occupancy, these metrics and data serve to help evaluate the degree to which the design met the intended outcomes.

As the building was nearly complete by the time this research project began, participants had already coalesced their perspective and concerns about Mission Hall. This is most evident in the preoccupancy interview and focus group responses from participants who appeared to focus solely on Mission Hall. During these meetings, questions regarding their previous work environments were quickly answered and participants turned their attention to the perceived impact of Mission Hall.

Pre Occupancy Survey

Given this schedule, there was no time to develop a pre occupancy survey to capture the perspectives of a larger population is as related to the areas of greatest Faculty concern.

Post Occupancy Survey

Moreover, given the survey refinement process previously described, the release of the post occupancy survey was a year or more after most had occupied the building. While it may be argued that a post occupancy at one year of occupancy is fine from a research perspective, it did represent an extension to the overall research.

Time Utilization / Survey Link

Additionally, while it would be optimal to link the findings from the time utilization assessment to the functional worktypes, the university does not track functional roles in its space management system. Therefore the team lacked data about the role and patterns of work of the individuals assigned to each workstation. Therefore, it was not possible to link the variances that are rightly expected across functional roles to the patterns of use found in the two time utilization studies.

Recommendations

Across the four major indicators of Satisfaction, Well-Being, Work Effectiveness and Engagement, prior to occupancy, participants were most concerned about basic workplace functionality related to their Mission Hall move.

Following occupancy, their concerns shifted slightly with their daily experience at Mission Hall. Technology continues to be a major challenge as does cohesion between and within departments. Environmental adjustments and communication continue to be of concern as well. However, the overall building governance and emerging social/cultural issues gained prominence in the discussions. While preoccupancy responses addressed the first three, post occupancy responses added the latter two. Each of these is described further below.

These concerns fell into the following categories:

- Technology
- Communication
- Environmental Adjustments
- Cohesion, Social and Cultural issues
- Building Governance

TECHNOLOGY

Technology refers to the need to equip the occupants with the tools necessary to take advantage of an Activity-Based Workplace.

Most participants noted that they were not provided with laptops or headsets as part of the move and questioned how they were to move freely in Mission Hall without those resources. Others questioned available Conference Room technologies and how training was to occur. Again, in these cases, participants were not reflecting on their previous environments, which most often were very limited in these same ways. However, Faculty working in offices may not have had these requirements previously.

Following occupancy, these expected technology roadblocks surfaced in a variety of ways. These include:

- Shortcomings in the provisioning of tools at the individual level to allow occupants to move freely throughout the facility and to take advantage of the variety of environments offered
- Limited awareness of the technologies provided in Conference Rooms and even more limited awareness of how to best leverage those for the work of the School of Medicine
- Technologies provided in Conference Rooms and classrooms require reevaluation in terms of tools provided and the associated support required to learn how to operate them and to maintain them over time.
- Limited support for the technologies provided, both in terms of necessary hardware connections as well as in software, training and trouble-shooting.
- Scheduling software needs to be considered to improve wayfinding and coordination among team members. If team members are asked to 'find an open Huddle Room' it is difficult to coordinate meetings as the destination is TBD until the last minute.
- Limited provisioning of copy/print/scan machines given the volume of occupants and the code-based use of these printing services to meet HIPAA requirements. This requires reconsideration of the number of machines as related to the total number of occupants.
- Limited ability to digitally connect across campuses, taking advantage of readily available technologies in order to reduce commute time between facilities
- Unclear chargeback systems and associated budgeting per department resulting in limited connectivity across campus locations and/or increased commute time
- Unclear responsibilities across the various university technology support teams resulting in delays in responses and/or lack of response to Faculty/Staff requests for support

Recommendations, continued...

- Misalignment between expected behavior and tools provided (such as controlling noise in the open plan while providing a speakerphone at the workstation as well as Wi-Fi instability)

Recommendation

Conduct a technology review of the issues in order to prioritize concerns and to immediately begin improvements. Having appropriate tools is a core criterion for the success of any workplace that encourages onsite mobility and the adoption of digitally-mediated work [across locations using Skype, Jabber, etc].

COMMUNICATION

Communication refers to the need to increase overall sharing of information as well as to address unanswered questions in a different way.

Participants noted increasing frustration with the limited availability of information as well as the inconsistency of response. These concerns appear to be based on the fact that most information was either posted online in a web resource that the majority did not use, or were generated within departments resulting in inconsistent information. The lack of a 'building voice' creates multiple parallel channels that in turn negatively impact participants as they sort through the various communications and try to make sense of what is in process to improve their situation.

UCSF has invested significant time and resources to create Mission Hall-focused communications that were both meaningful and correct. However these were not resonant with participants.

Communications should be reviewed with assistance from departmental representatives who are collecting feedback from occupants. These colleagues will have the best sense of where information is needed and where concerns reside as well as how to best connect communications within the departments to a broader Mission Hall strategy. Direction should be developed with the advice of the Department Chairs.

Recommendation

Restructure the overall communication process, focusing on critical change management issues and devising a comprehensive program that addresses ongoing concerns from occupants. A comprehensive

communication program links key information sharing, training and change management support. This would include the primary issues identified herein and also capture the more nuanced daily concerns for the occupants.

With appropriate departmental representation (from the Mission Hall Working Group) in such a discussion, the Communications Team could have a clearer understanding of the range of issues to be addressed and the best means to engage Mission Hall occupants.

ENVIRONMENTAL ADJUSTMENTS

Environmental Adjustments refer to the ongoing changes to the physical environment.

The team recognizes that the University is in the process of evaluating a series of possible adjustments, such as increasing enclosure of the Town Center, repurposing some of the Focus Rooms, improving building secured access and changes to building maintenance routines. As responses to expressed concerns from occupants, these need to both be addressed and also to be properly communicated to the occupants as a whole.

- Focus Rooms require reevaluation in terms of their sound isolation, their technology and furniture as well as in terms of the ratio of rooms provided.
- Huddle Rooms require reevaluation in terms of their sound isolation, their technology and furniture as well as in terms of the ratio of rooms provided.
- Breakout Areas require reevaluation in terms of their sound isolation and furniture.
- Town Centers require reevaluation in terms of their sound isolation as well as their maintenance.
- Wayfinding needs to be developed so that there is a building-wide approach
- Reconsider density of machine per occupant.
- Evaluate storage space and equipment space to assure support for key work functions.
- Isolate noise-generating activities from heads-down work environments.
- Clinicians should be given consideration for touch-down locations in the clinic/hospital.

- Personalization protocols require development and communication.
- Lighting should be evaluated given the number of complaints and the number of lamps removed within the open work environments.
- Given UCSF's ergonomics program, occupants should have access to those resources.
- Piloting of changes should be part of the process as these recommendations may require iteration to properly align with work requirements.

Recommendation

Make environmental adjustments to both demonstrate that the university is responsive to its Faculty/Staff and also to understand the range of possible adjustments that provide the best outcomes for the occupants.

COHESION, SOCIAL AND CULTURAL ISSUES

Cohesion refers to the need for the community of Mission Hall to come together in order for the environment to be successful.

Organizationally, there appears to be a sense of disconnection between the various departments which limits teams' ability to see Mission Hall as a shared resource for their community.

Cohesion may have been the greatest attribute of the previous environments. Staff had found ways to be successful in spite of their environments. Faculty were mostly satisfied with their offices. Together, the departments were getting their work done and were performing with their routines in place. The shift to a new environment not only changes those routines, but with Mission Hall, also changes the spaces and technology that supported those routines. Without offices and suites, participants questioned how they would maintain their group identity and also how they would control their daily work flow.

Following occupancy, participants noted significant downgrades in group cohesion. They expressed concern about the apparent lack of attendance at Mission Hall but also noted a number of other issues negatively impacting occupants who did come to Mission Hall.

Participants noted a range of personal behaviors that are symptomatic of a larger set of negative group dynamics at Mission Hall. Examples include reprimands of Staff in open office environments, 'shushing' those nearby, disruptive use of technologies [such as use of speakerphone functions] in the open office and verbal admonishments about window blind levels. These examples point to assumptions that these behaviors are acceptable in the workplace. Fundamentally they also suggest that there is a lack of respect among coworkers and/or a lack of self-awareness from those instigating the behavior.

These behaviors create stress within the work environment and in doing so disrupt occupants' ability to focus on their work as well as their interest in engaging with their departments. Participants specifically described how these behaviors discourage them from coming to Mission Hall as well as discouraging them from speaking to colleagues while at Mission Hall.

Concerns include:

- Lack of good neighbor policies/approach in terms of sound management
- Inconsistencies in sound management across hierarchical roles
- Inappropriate use of speakerphones
- Inconsistencies in departmental leadership expectations on attendance at Mission Hall
- Inconsistent provisioning of group resources
- Emergence of 'boundaries' signifying group ownership of spaces
- Loss of group identity in open plan environment
- Limited campus life activities
- Lack of Floor identity
- Lack of a sense of place within Mission Hall

Recommendations, continued...

Recommendation

Establish a series of good neighbor policies that address shared resources, sound management, lighting/window blinds management and similar issues, developed with Faculty and Staff participation and endorsement.

Establish an agreed approach and messaging regarding attendance at Mission Hall.

Develop an approach to departmental group identity that is in keeping with the UCSF SoM goals for Mission Hall but that also allows for departments to capture some sense of personalization and in doing so to begin to establish an environment that they may comfortably occupy.

Develop Mission Hall community activities to begin to connect departments in meaningful ways.

GOVERNANCE

Governance refers to the daily management of policies and facilities.

As part of the transition from distributed departments to collocated departments, this critical function was not reestablished. UCSF clearly needs an approach to the governance of the building as Mission Hall occupants require a set of policies/protocols for the environment as well as directed daily support to operate and maintain their work environment.

Following occupancy, participants noted problems with building governance, including maintenance, space use policies, building security, and provision of hospitality resources such as beverages and supplies.

Recommendation

Develop a Mission Hall Governance Committee that in turn will develop, in concert with university representatives from technology and capital programs, key governance policies and budgets across Mission Hall. This includes basic building operations protocols and supports as well as management of the common spaces across all floors including provision of basic amenities such as beverages.

Review current building maintenance approach against feedback from occupants.

Develop building-wide security protocol.

Develop process to provide departments with greater decision-making power regarding how they use spaces within their unit.

NEW WORKING GROUPS

To address these issues, UCSF has formed three working groups: The Open Plan Workplace Governance Task Force, the Programming Committee and the Working Group to support all UCSF new building projects.

Open Plan Workplace Governance Task Force

To address the deficiencies of Mission Hall and to successfully develop alternate open plan designs for future buildings, Chancellor Hawgood established the Open Plan Workspace Governance Task Force. The task force was charged with developing principles for programming, designing, governing, and occupying open plan workplace environments at UCSF.

Programming Committee

The charge of the Programming Committee is to provide advice and recommendations on building-wide programming issues to guide the development of the building. The Programming Committee findings and recommendations will be reported to the Space Development Committee.

Working Group

The charge of the Working Group is to represent users and provide detailed programming input related to occupant requirements. The Working Group recommendations will be reported to the Programming Committee.

ADJUSTMENTS IN PROCESS

The UCSF team is actively addressing some of the issues identified from the research to date. The team recognizes that Mission Hall is a work in process and as such has a dedicated team working on these ongoing issues.

To address the deficiencies of Mission Hall and to successfully develop alternate open plan designs for future buildings, Chancellor Hawgood established the Open Plan Workspace Governance Task Force, to develop principles for programming, designing, governing, and occupying open plan workplace environments at UCSF.

The Task Force developed principles in the following areas:

- Physical Layout
- Allocation of Workspaces and Support Spaces
- Environmental Features

- Technology
- Building-wide Governance

Each of these is further described in Chapter 4.

The Task Force concurs with the preliminary findings of the Mission Hall Workplace Research Study that there are major deficiencies in the building, which need to be addressed to enhance functionality and utilization. The Task Force strongly recommends that immediate interventions be taken to correct the deficiencies, which could be in the form of governance, communication/training, non-capital improvements and capital improvements, and that longer term improvements, including capital improvements, be undertaken as soon as is reasonably possible, and well underway within one year after the acceptance of the Task Force's report and recommendations by the UCSF Space Development Committee. For further information see the Open Plan Workspace Governance Task Force Draft Report, January 2016.



Approach to Mission Hall from 16th Street (Source: WRN Studio)

2

WORKPLACE RESEARCH STUDY

Background



As a research university, UCSF recognizes the importance of evaluating alternative workplaces and supports evidence-based design.

IN THIS CHAPTER

- ▶ Guiding Principles & Research Mission
- ▶ Study Design
- ▶ Literature Review

INTRODUCTION

In order to accurately interpret the information contained in this report, it is important to understand the context in which the study is being conducted. The following chapter includes background information to orient the reader to this study, including the following subsections:

- Background: Introduction to the new Mission Hall facility and the guiding principles behind the building.
- Research Mission and Study Design: A description of the goals of the study, and the tactics used.
- Literature Review: A review of workplace research related to the subject matter of Satisfaction, Work Effectiveness, Well-Being and Engagement.

Guiding Principles & Research Mission

MISSION HALL BACKGROUND

Completed in August 2014, the approximately 260,000 square foot, seven-story Mission Hall building houses classroom and meeting spaces, the Chancellor's Office, and 1501 workstations for academic, research, and administrative personnel. The occupants of this building include clinical departments, Faculty and Staff associated with the new Medical Center located across 16th Street directly south of the Academic (Office Building), the Global Health Program, Epidemiology and Biostatistics as well as other UCSF departments currently located at various UCSF owned and leased spaces in San Francisco. This group of departments includes researchers and clinicians involved in the development of a new medical research and in the delivery of clinical practice.

GUIDING PRINCIPLES

As excerpted from the Performance Guidelines for Mission Hall, the facility aims to:

- Support UCSF's mission of excellence in academics, health care research and clinical care by developing a gathering place that facilitates a rich professional and community life,
- Foster an interactive, collegial, and collaborative environment that fuses the clinical programs with dry, basic and translational research,
- Provide a model for the future of UCSF workplace through an Activity-Based Workplace tailored to the function, activities, and tools of UCSF faculty, staff and students,
- Achieve optimal efficiencies in the use and organization of space, circulation and core functions,
- Integrate building functions, technology and systems for high performance, maximizing function, serviceability and durability, and
- Connect the exterior, interior, office and learning program elements to create a rich and full experience for the building users.

RESEARCH MISSION

As a research university, UCSF recognizes the importance of gauging the degree to which an ABW environment supports the academic, clinical, and research mission of the SoM, and addresses the performance guidelines for Mission Hall. To that end, in the summer of 2014 the UCSF SoM commissioned a workplace research project to assess Satisfaction, Well-Being, Work Effectiveness and Engagement prior to, and following, a move into the new Mission Bay Block 25-A Academic Building (Mission Hall). The research is empirical, following the Human Subjects Review protocol administered by the UCSF.

The research team is comprised of UCSF Principal Investigator, Dr. Nancy Adler, Dr. Janice Barnes and staff from Perkins+Will, Dr. Jean Wineman from the University of Michigan and Dr. John Peponis from Georgia Tech. This team is also collaborating with the University of California Berkeley Center for the Built Environment [CBE].

The charge of the team is to assess opportunities and challenges in using Activity-Based Workplace in an academic setting for the SoM. This research specifically examines how well individuals, teams, and departments located in Mission Hall are supported.

The research aims to provide insight at three scales: (1) Provide immediate feedback on Mission Hall to address issues and consider longer-term concerns. (2) Provide feedback on upcoming capital projects elsewhere in the University that may consider alternative workplace solutions. (3) Develop a longitudinal research protocol that tests the success of ABW at Mission Hall over time. This report addresses the first scale to provide feedback about Mission Hall.

PARTICIPATION

All Faculty and Staff who were assigned space at Mission Hall were invited to participate in the study. Participation was fully voluntary. Feedback collected was anonymous and reported in aggregate.

Study Design

SAMPLE SIZE AND ELIGIBILITY

The samples for different study activities varied by the activity type. The number of subjects was chosen to provide a representative sample of responses. The eligible age was 18+. All UCSF SoM faculty and staff who were assigned to space in Mission Hall were invited to participate in the interviews and focus groups and to complete the online survey.

TACTICS

The study included multiple tactics designed to capture feedback from occupants in Mission Hall. These included:

- Interviews with Departmental Chairs
- Focus Groups with Faculty and Staff
- Info Poll
- Site Observation of previously occupied locations as well as Mission Hall
- Online Survey
- Benchmarking
- Occupancy Analysis
- Time Utilization Study

Pre Occupancy and Post Occupancy interviews, focus groups and site observations were conducted. However, due to the timing of the study, other tactics could not be conducted in the preoccupancy period. These tactics were only therefore used post occupancy.

INTERVIEWS WITH DEPARTMENTAL CHAIRS (INDIVIDUAL SESSIONS)

Prior to occupancy [where possible] Department Chairs were invited to participate in a one-hour session to discuss perspectives about their former workplaces and to project their expectations and/or initial reactions to Mission Hall. Following occupancy, Departmental Chairs were again interviewed.

There were 7 Pre Occupancy Interviews and 6 Post Occupancy Interviews (Figure 01).

FOCUS GROUPS WITH FACULTY AND STAFF (GROUP SESSIONS)

Prior to occupancy Faculty and Staff were invited to participate in a one-hour session to discuss perspectives about their former workplaces and to project their expectations and/or initial reactions to Mission Hall.

In an initial round of focus groups, Faculty and Staff participated together. However feedback [explained below in Study Design Adjustment] suggested that a more homogeneous focus group composition would allow for more frank conversation. As a result, subsequent focus groups maintained homogeneity and divided Faculty and Staff into separate focus groups.

Following occupancy, Faculty and Staff were again engaged in separate focus groups.

A total of 19 Focus Groups were conducted in the Pre Occupancy Research and 29 were conducted in the Post Occupancy Research (Figure 01).

POST DOCTORAL FOCUS GROUPS

In the spring, the team invited Post Docs to participate in post occupancy focus groups. Unfortunately, there was limited interest in participation even with multiple prompts.

INITIAL ROUND STUDY DESIGN ADJUSTMENT

Faculty expressed discomfort in speaking freely in front of Staff about anticipated challenges of working at Mission Hall. Many expressed the need to maintain a “positive face” as a department leader, while also having significant reservations about moving to an Activity-Based Workplace. To address this concern, separate Faculty and Staff focus groups were scheduled.

Similarly, Chairs were given the opportunity to either participate alone, with a group of other Chairs or with their Faculty. All three occurred in the variety of Chair interviews.

Also, based on the experience of the initial interviews and focus groups, the questions were streamlined to reduce some redundancy and slightly reworded for clarification.

	Pre Occupancy		Post Occupancy		Total Participants
	Sessions	Participants	Sessions	Participants	
Chair Interviews	7	12	6	21	33
<i>Focus Groups Round 1:</i>					
Faculty	1	6	6	25	31
Staff	1	5	7	47	52
Faculty/Staff Combined	3	15	N/A	N/A	15
<i>Focus Groups Round 2:</i>					
Faculty	9	16	10	31	47
Staff	5	25	4	25	50
<i>Focus Groups Round 3:</i>					
Faculty	N/A	N/A	2	2	2
Staff	N/A	N/A	N/A	N/A	N/A
Total Focus Group Sessions	19		29		
Total # of Overall Participants					230

Figure 01 Summary of Interviews and Focus Groups

Initial Round Study Design Limitations

As these sessions were voluntary, the team could not control the sample sizes of Faculty and Staff. Multiple time slots were made available to increase participation.

Second Round Study Design Limitations

Interestingly the first round of focus groups demonstrated how challenging it can be to parse the way individuals work based purely on group affiliation. There was a wide variety of work patterns described due to differences such as:

- Departmental objectives
- Multiple roles within and between departments
- Multiple campus assignments
- Methods of patient care
- Reliance on specialized equipment
- Adjacency requirements
- Mobility patterns
- Contact with research subjects

- Need for privacy due to highly stressful/emotional situations
- Storage of specialized documents or physical samples related to studies

Second Round Study Design Added Tactic

This complexity represented an initial finding, but also a challenge to better identify the various Faculty and Staff typologies to be supported at Mission Hall. To address this issue in the second round of focus groups and interviews the team created a brief survey for participants. This survey was called Info Poll.

INFO POLL

The team created a brief poll that was sent to each of the participants of focus groups and interviews who had yet to move to Mission Hall. The intent of the poll was to obtain a better sense of where individuals worked across and beyond the UCSF campus prior to the move to Mission Hall. Due to limited response rate, the team was unable to capture substantive commentary.

Study Design, continued...

These brief surveys however served as starting points to have broader conversations with Faculty and Staff related to styles of work. The survey also allowed the team to gain insights into critical adjacencies related to space and equipment for certain focus group participants. Finally, this initial survey helped to inform the team's ongoing site observations in Mission Hall. Ultimately, the feedback provided a greater understanding into the many roles they and responsibilities required in their work, beyond basic classifications such as Faculty and Staff.

The week in the life poll consisted of three questions.

1. The first question (A) asked participants to define their role and department within the UCSF system. With this information we are able to sort the data based on departments and roles within those departments.
2. The second question (B) asked participants to consider a typical work week at UCSF. Poll respondents then quantified the amount of time they spent in the range of work settings over the course of the week.
3. The third question (C) asked participants to define key adjacencies related to their day to day work. This question included clinical and hospital settings, classrooms, as well as spaces with equipment critical in performing day to day activities.

Polls were only conducted in the second round of the focus groups and thus represented a very limited sample size. However, in subsequent interviews with Department Chairs, the typologies resulting from this research aligned with understood functional roles.

SITE OBSERVATION

In September and October of 2014, the team conducted tours of a representative sample of the facilities that the SoM/Mission Hall occupants would be moving from starting with the October relocations. These tours were primarily intended to set context and to better understand feedback in interviews and focus groups.

Beginning in September of 2014, the team also conducted site tours of the Mission Hall facility prior to occupancy. By November, when initial occupants had settled into their new environment, the team toured again. Additional tours in December, January, and February allowed the observation of

a greater site population as additional occupant groups were relocated to Mission Hall and each tour was observational only. The team used these tours to see how patterns of use would emerge. The observations offered additional data points for contextualizing comments from other feedback tactics.

SURVEY

Given the concerns expressed by Faculty leading up to the development and launch of this research project, it was important to finely tune survey protocols in order to capture the most relevant data related to the effectiveness of ABW at Mission Hall. While UCSF had previously successfully partnered with University of California Berkeley Center for the Built Environment (CBE) and had assumed that the protocols available at CBE were applicable, early outreach to Faculty identified that the protocols were not comprehensive of Faculty concerns.

CBE protocols are well established in terms of building performance evaluation, but concerns at Mission Hall focus more on Satisfaction, Well-Being, Work Effectiveness, and Engagement. The CBE existing protocol did not address these issues. Therefore the team was concerned that deploying the existing CBE building performance protocol would raise further Faculty concerns. As a result, the team chose to gather a finer grain of detail from the initial focus groups, eliminate the preoccupancy survey and tune the protocols overall for a post occupancy deployment. While the lack of a preoccupancy baseline is not ideal, it is more critical to have protocols that address the SoM concerns. As the UCSF intends to develop a longitudinal research project from this early work, this is a valuable investment in creating appropriate tools that are more on target for the issues arising from ABW.

This survey developed now takes advantage of the CBE validated survey instrument and historic data set while tailoring new questions specifically to the needs of the study.

This survey includes three unique sections: (1) Satisfaction, (2) Location, and (3) Environmental Quality. Satisfaction focuses on occupants' experience in the building and the degree to which the building affects day to day work. Location focuses on the various spaces in the building. Environmental Quality focuses

on issues such as temperature, lighting and air quality. Each of these sections contributes to an overall understanding of the ways in which the building affects occupants and their work.

Over the course of the study, the team collaborated with Faculty at Mission Hall, more broadly within the SoM as well as with the Academic Senate to expand and refine the survey protocol.

The team worked with a Faculty Beta Group to test the refined protocol and further update its language. This group tested the online survey for usability and provided feedback about specific changes that would improve the robustness of the protocol.

In April 2015, the team submitted the protocol to the Academic Senate for review. In June 2015, the Academic Senate provided feedback on finer tuning of several of the questions and also asked that the Post Occupancy Survey be delayed until the Fall of 2016. The Academic Senate felt that it was important to allow more time for occupants to settle into Mission Hall and also important to wait until the Fall term began in order to capture the greatest participation. The Academic Senate also requested a second review of the revised protocol.

Initial Academic Senate feedback was integrated and resubmitted to the Senate for review. In December 2015, the Academic Senate provided final feedback and agreed to the revised protocol. With pending holiday breaks, the team chose to hold the survey until the Winter Term.

The survey was released in January 2016 and held open for three weeks. The team provided the initial invitation to participate in the survey and multiple reminders of the opportunity to participate. The survey remained open for approximately four weeks.

The survey was sent to all those assigned workspaces at Mission Hall. Of all invited, the total response was 585. Considering that there are 1501 workspaces at Mission Hall, this represents a response rate of 39%.

Description of Responses

Descriptive statistics were used to represent the survey responses to each question. Question sets were grouped according to Satisfaction, Work Effectiveness, Well-Being and Engagement.

Regression Analyses

Following an examination of descriptive statistics, the team created a series of regression models to explore relationships among the response variables. In particular the team wanted to understand how the environment was affecting our outcome variables: Satisfaction, personal Well-Being, individual and group Work Effectiveness and Engagement.

The occupant survey allowed the team to compare assessed qualities of spaces and time spent in different settings with measures of the effectiveness of workspace design and layout.

BENCHMARKING

The team completed a global scan of UCSF SoM's peers and aspirant institutions. In this scan, the team identified which of the institutions had a recently completed [within five years], relevant academic facility. Because few had recently completed academic office facilities and none had ABW, these represent a fairly small sample of relevant comparable projects. To complement this sample, the team expanded the scope to other Schools of Medicine with relevant recent ABW projects. To understand how these projects were similar or different in their spatial layout, comparisons were made between Mission Hall and these comparable building projects based on objective measures, such as square footage ratios.

OCCUPANCY ANALYSIS

The team conducted further analysis of the spatial layout of Mission Hall. This analysis provided objective measures to characterize the spatial layout and relations of functional elements of the plan. These measures were used in understanding occupancy behavior of participants as captured in the Time Utilization Study.

TIME UTILIZATION STUDY

In the spring and fall of 2015, the team conducted two in-depth Time Utilization Studies of the Mission Hall over the course of a full week each. Each study examined how space was being used over the course of each day, including quantitative measures of occupants and qualitative descriptions of activities.

Literature Review

ACTIVITY BASED WORKPLACE: MEASURES OF SUCCESS

Although descriptions of the concept of Activity Based Workplace (ABW) vary, most ABW share several underlying principles.

The fundamental principle of ABW is that people choose where to work within a work environment that provides a choice of settings for a variety of workplace activities. Thus, they are able to structure their days more productively. This can mean that employees do not have an individual desk or workstation of their own. Typical layouts include settings for intense focused work, impromptu and informal meetings spaces and formal meeting rooms.

The second principle is that ABW is supported by technology, particularly wireless information technology, and its success depends on the successful deployment of technology.

The concept of ABW responds to the belief that organizations must deal with changing external and internal business environments and the belief that performance is enhanced when people enjoy their work under the right conditions.

Advantages that proponents claim include: increased productivity; increased autonomy and entrepreneurship within an organization; stronger image and workplace culture; increased collaboration, communication and knowledge sharing within and between teams; increased employee enjoyment, well-being and satisfaction; increase opportunities for team-oriented work; support for specific tasks through environments that are appropriate to needs; improved spatial economy with more efficient use of facilities, floor and desk spaces.

Potential disadvantages include: unpredictability of available space and, loss of privacy and disruption. ABW will not be appropriate to all workplaces or types of service delivery.

Results of comparative evaluations of ABW offices report varying results. Some positive responses often related to increased collaboration, shared knowledge, and the ability to move to 'Focus Room' areas designed for concentrated work (Battenburg and Van der Voordt, 2008; De Been and Beijer, 2013; Van der Voordt, 2004; Van der Voordt et al, 2012).

Others report reductions in satisfaction, perceived privacy, and perceived productivity due primarily to difficulties associated

with work requiring focused concentration (Appel-Meulenbroek et al, 2011; Gorgievski et al, 2010; Maarleveld and Been, 2011; Mosselman et al, 2010; Van der Voordt, 2004; Van der Voordt and Klooster, 2008; Vos and Voordt; 2002).

Malkoski (2012), in a review of the Australian experience, suggests that the ABW concept is a new way of working that emphasizes the team approach. "To be successful, the losses and gains should be made explicit...individual ownership of a workstation is lost and team ownership of a home zone is gained." Malkoski goes on to observe that "for ABW to be successful, it must be relevant to the workforce: who they are and what they do at work. ABW is not for everyone and is more appropriate for a workforce that is mobile or is planning to embrace mobility with the support of its leadership team. It may be that ABW is applied to some teams or departments within an organization, but not all, as is the case in Australia."

WORKPLACE DESIGN RESEARCH

Workplace design research addresses the connection between the nature of work itself, and the physical facilities that support that work (Duffy, 1992, 1997). More generally, the workplace design literature mainly treats the organization's physical facilities as a managerial tool that can potentially be used to improve performance. Previously published literature suggests the importance of spatial organization on:

- Satisfaction
- Well-Being
- Work Effectiveness
- Engagement

Each of these is defined and further explained in the following pages.



Satisfaction

Satisfaction refers to participants degree of personal satisfaction and includes issues reflecting their morale.

Investment in attracting highly trained knowledge-workers has resulted in increasing focus on worker retention. Job satisfaction, employee comfort, and organizational commitment are important indicators of organizational success.

Workplace design should reach beyond the facilitation of work tasks to support the overall satisfaction of occupants. Aspects of the physical design of the workspace, such as lighting, temperature, and noise for example, are important considerations for job satisfaction. As office design/layout affects movement and interaction patterns, these design features may also affect user attitudes and perception of the work environment. The literature on environmental design and behavior has extensively discussed the nature and importance of these effects (for a literature review see De Croon et al., 2005; Gifford, 1997; 2002; McCoy, 2002; Mittleman, 1996; Oldham et al., 1995; Rashid and Zimring, 2005; Sundstrom, 1987; Wineman, 1982). Research indicates that satisfaction with the workplace is closely related to perceived productivity (de Been, 2011; Leaman and Bordass, 2007), job satisfaction (de Croon et al, 2005; Sundstrom et al, 1994) and other organizational outcomes (Veitch et al, 2007; Wineman, 2014).

A range of earlier studies (for example see Brennan et al., 2002; Cangelosi and Lemonine, 1988; Marans and Spreckelmeyer, 1982; Sundstrom et al., 1980; Zalesny and Farace, 1987) compare the effects of traditional versus open-plan offices in terms of different aspects of environmental design and their relationships to behavior. Social relationships (social interaction, friendship formation, and informal group liaisons), sense of community, and sense of privacy are affected by the physical proximity and visual and acoustical accessibility of workstations (Rashid et al., 2005; see also Sundstrom, 1986, for a review).

Informal communication is increasingly recognized for its role in the promulgation of organizational culture (Allen, 1977; Becker & Sims, 2001; Cross et al, 2002; Peponis et al., 2007; Sundstrom & Altman, 1989; Wineman & Serrato, 1999). "Rather than being a distraction, informal communication is seen as a way to build commitment, spread ideas about how 'we do things around

here' and as a way to share knowledge and skills that go beyond the written requirements for doing a job" (Rashid et al., 2006).

Space has a role to play in fostering tacit knowledge (such as communities of practice), knowledge "which is absolutely essential to innovation and the flow of information" and which "is dependent on relationships and communication among individuals" (Becker, 2002, p.138). Moreover, spatial organization is essential to tacit learning. "Like tacit knowledge, which is informal and unstructured, tacit learning occurs in a serendipitous, unplanned way as a by-product of routine, daily activities" (ibid.) and unplanned encounters between individuals. In a study of the workplace use patterns of biomedical professionals, Kabo et al. (2014) found that it was not simply the overlap of use patterns (as measured by 'zone overlap') that predicted increased collaboration, but what spaces were encompassed in those 'zones'.

Davis and his colleagues (2011), in their review of more than a hundred studies of open office environments (as compared with enclosed offices), conclude that open offices often fostered shared organizational culture. However, this study also reports that open environments are associated with occupant reports of more uncontrolled interactions, higher levels of stress, and lower levels of concentration and motivation.

A number of other studies document the relationship between the reduced sound and visual privacy associated with open-plan offices and resulting feelings of loss of privacy and personal control in the workplace (Brand and Smith, 2005; Daneilsson and Bodin, 2009; O'Neill and Carayon, 1993). Research has identified 'irrelevant speech' as associated with reported workspace dissatisfaction, lower productivity and stress (Becker, Bield, Gaylin, & Sayer, 1983; Nemecek & Grandjean, 1973; Sundstrom, Town, Rice, Osborn, & Brill, 1994). Irrelevant speech was identified as more intrusive than other types of noise including traffic noise and telephone ringing.

Becker and his colleagues (1983) conducted a study comparing open-plan to closed offices at a community college (100 faculty and 356 student respondents). Faculty in open-plan offices reported more difficulty concentrating and working efficiently. Students felt that faculty were less available in the open-plan office, and the quality of feedback they received from faculty suffered.

Literature Review, continued...



Individual workspaces in Mission Hall

More recent research on open-plan workspace, consistently identifies noise and lack of privacy as sources of dissatisfaction (Daneilsson and Boden, 2009; Davis et al, 2011; De Croon, Sluiter, Kuijter, & Frings-Dresen, 2005; Kim and de Dear, 2013). Vos and Voordt (2001), reporting on the activity-based work model in the Netherlands, suggest that the success of this model has been varied. The encouragement to communicate and the open office feel of the environment are positives. Negatives are associated with lack of privacy (visual, acoustic, territorial) and the difficulty with concentration. Focus rooms are often perceived as cramped and insufficient in acoustical isolation. Also cited were feelings of lack of control and visual stress. A study of 10,000 respondents of 71 case studies (Maarleveld, 2011) reports that workers who are more satisfied with their ability to concentrate are more likely to rate the environment as supportive of productivity.

Smith-Jackson and Klein (2009) observe that open-plan offices (cubicles and shared offices) are equipped with barriers such as panels and bookshelves to induce the perception of a private workspace. In a controlled experimental study, using a proof-reading task requiring focused attention, these researchers

found that “despite perceived privacy, irrelevant speech contributes to mental workload, poor performance, stress, and fatigue” (p 273). Results based on a controlled experiment of a simulated open-plan office (Jahncke et al, 2011) indicate that participants remembered fewer words, rated themselves as more tired, and were less motivated while working in noise as compared to low noise conditions.

A particularly relevant study (Kim and de Dear, 2013) analyzed the database from CBE (Center for Built Environment) at the University of California, Berkeley. The research explored relationships between office building layouts and occupant responses to CBE's occupant survey questionnaire (a total of 42,764 respondents in 303 office buildings). The results of interest were those from workers housed in open-plan office layouts (including high, low or no partitions). This included two-thirds (66.9%) of the full sample of respondents. Empirical analyses indicate that sound privacy (the ability to have conversations without neighbors overhearing and vice-versa) was the most significant environmental concern, leading to the highest levels of dissatisfaction. Partition height did not appear to influence this outcome. This study did find an association

between the number and height of partitions and 'visual privacy'. However, sound transmission between workstations was not affected.

Veitch et al (2007) found that the relationship between environmental satisfaction factors, overall environmental satisfaction and job satisfaction were consistently aligned. These outcomes align with other research which connects job satisfaction and physical environment satisfaction. (Dillon & Vischer, 1987; Donald & Siu, 2001; Wells, 2000).

Researchers conclude that the increase in workplace satisfaction due to the benefits of 'ease of interaction' were much less than the negative effects of dissatisfaction due to the noise and lack of privacy associated with the open-plan layout.



Mission Hall exterior public space. Note common picnic table in the foreground.



Well-Being refers to participants interactions between their persons and those of the organizational and work environment.

Well-Being and Satisfaction

Biggio and Cortese (2013) conducted research on the meaning of well-being in the workplace and kind factors and individual characteristics affecting it. Overall, they argue that well-being is not only an interaction between individuals and the organization, but is strongly related to the quality of the relationship between individuals. They identify values, organizational functioning, and physical environment as key ties between an individual and an organization. They further identify being positive, communication, and management of difficulties as key to personal resilience and well-being. Finally, they note that socio-emotional skills and 'niches of well-being' are part of the "mosaic" of adaptations that an employee develops to manage personal well-being. They argue that well-being is heavily influenced by person-organization fit. This is relevant to this study as the university and employees, like all organizations, have an innate set of shared values and expectations that govern behaviors and the ways in which conflicts in values or behaviors are managed. This fit is a key criterion relating satisfaction.

In referencing earlier research by Isen (1987), Warr (1999) and Csikszentmihalyi (1997) in which well-being and job satisfaction are related, they in turn relate this to well-established research on the psychological contract and its connection to well-being (Guest and Conway, 2002).

Ryan and Deci (2001) make a similar connection in their description of hedonic definitions of well-being in which that which one values and invests in provides the expected outcomes to oneself. They note that well-being in this regard is idiosyncratic and culturally-specific. Comparatively they introduce eudaimonic definition of well-being in which one's values and activities align. For a full review of the literature of both perspectives see Ryan and Deci (2001).

Similarly Biggio et al (2013) suggest that well-being is self-identified and self-directed, and in doing so, challenge common perceptions that well-being is dependent on job satisfaction, social connections and other effective aspects of work. They

suggest that individual definition of well-being is as influential as these larger cognitive frameworks. They also raise an important point on the draw-down on personal resources when organizational factors and/or interpersonal interactions require more emotional resilience to cope with ongoing situations.

They call out people as 'activators of well-being.' This shifts perception from well-being as an action from an outside influence. They suggest a bidirectional approach to well-being wherein the individual and the organization come together to co-create well-being for mutual benefit.

Well-Being and Wellness

Woods (2010) suggests that there is an unexplored connection between well-being and emotion in the higher education workplace, specifically tied to appraisal. Woods refers to Lazarus's early work on appraisal in which he connected the importance of integrating one's emotions and personal interests to one's environmental realities (Lazarus, 1991). Lazarus defined appraisal in terms of 'primary' in which a situation has some emotional impact on oneself. The 'secondary' appraisal is one's decision about how to deal, or cope, with the situation.

Shuck et al (2013) connected the psychological climate to individual outcomes. Specifically the psychological climate predicted a variety of outcomes such as exhaustion, depersonalization, personal accomplishment, and psychological well-being. They noted that "results provide empirical support that psychological climate affects a person beyond issues of productivity and turnover. Evidence suggests that psychological perceptions of climate share a relation with employees on an individual affective level, including how a person perceives their overall well-being, a variable often outside the boundaries of workplace performance, yet central to the experience of being human." They note that when the climate is positive, employees draw from their internal resources, but when the climate is negative, employees report not being able to do so. Without the ability to draw on those resources, employees will likely be more exhausted and more disconnected from their work.

Similarly, in their review of 49 empirical studies, De Croon et al (2013) found "strong evidence that working in open workplaces reduces the office worker's psychological privacy." They conclude that "working in open workplaces reduces the

office worker's psychological privacy and job satisfaction." They recommend workplaces that provide "sufficient shelter from unwanted acoustic and visual stimuli."

An open environment may also have negative effects on health and well-being (Frontczak et al., 2012, Pejtersen et al., 2011). A recent study (Pejtersen et al., 2011) of more than 2400 employees in Denmark, found that rates of sick leave were significantly correlated to the number of people working in a single space. Occupants of fully open offices were out an average of 62% more than those in single occupancy offices.

Faragher et al (2005) analyzed the relationships between job satisfaction and health noting that work practices that cause stress have a direct impact on psychological and to some degree, physiological, problems. They recommended that organizations prioritize addressing stress management in order to improve employee health, which is a recognized proxy for well-being.

They summarize the meta-analysis noting that "on average, employees with low levels of job satisfaction are most likely to experience emotional burn-out, to have reduced levels of self-esteem, and to have raised levels of both anxiety and depression." They reiterate that dissatisfaction at work can be "hazardous to an employee's mental health and well-being."

Well-Being and Environmental Stressors

A variety of earlier studies identified environmental characteristics as contributors to overall well-being. Frontczak et al (2012) review a number of previous studies that link occupant comfort [a component of well-being] to indoor environmental qualities such as thermal, visual, acoustic and air. Their review recognized view, control over the indoor environment, amount of privacy, layout, size, cleanliness, aesthetics and the furniture provided as relevant to occupant satisfaction. For a full review see Frontczak et al (2012).

Jahncke et al (2011) note that the design of work environments has a significant impact on employee well-being and performance. Stressors such as noise demonstrably impacted memory performance, motivation and tiredness.

Well-Being and Restoration

Jahncke et al (2011) describe the importance of visual and aural relaxation tactics as contributing to restoration from environmental stressors. In their experiment, the use of a restorative visual coupled with soothing sounds resulted in greater energy reported by participants. Without restoration, continued exposure to environmental stressors further degrades overall well-being, increasing tiredness and ability to focus.

Wells (2000) specifically connected personalization of one's workspace and environmental satisfaction which in turn positively impacted job satisfaction and well-being.



Mission Bay grounds (credit: Susan Merrell)



Work Effectiveness

Work Effectiveness refers to the ability of participants to do their work within the work environment.

Work Effectiveness and Open Office

The International Facility Management Association reports that the open office model (low or no partitions) has been adopted by about 70 percent of U.S. offices (Kaufman, 2014). Motivated by a search for enhanced communication and greater equity among employees, Silicon Valley companies, such as Google, Yahoo, and Facebook, have been leaders in this movement. However, the debate persists in the workplace design literature as to what constitutes a good space for work effectiveness. Recommendations range from basic comfort requirements, proximity to co-workers, available choices of meeting space and Conference Rooms, to concerns about the concentration of circulation patterns to enhance interaction and the modulation of boundaries to achieve appropriate levels of privacy.

Communication and Performance

Studies of the productivity of research and development teams suggest that communication is an important indicator of performance (Allen, 1977; Pelz & Andrews, 1966; Penn et al., 1999; Peponis et al., 2007; Shilling & Bernard, 1964). Increased interactivity has been shown to have positive effects on creativity and productivity outcomes including enhancing project coordination (Reagans & Zuckerman, 2001), promulgating specialized knowledge or advice (Rulke & Galaskiewicz, 2000; Sparrowe et al., 2001), or improving product quality (Rubinstein, 2000). Among effective project teams, it is not uncommon to find that the most productive ideas germinate from informal interactions a member of a group has with others outside the group (Allen, 1977; Baker et al., 1967). Peters and Waterman (1981), in their book *In Search of Excellence*, suggest that many of the best ideas produced by teams find their germination in unscheduled 'serendipitous' encounters with workers outside the team.

Spatial Organization

The layout of workplaces and types of boundaries in an office are important dimensions of the office environment (de Croon et al., 2005). Layout affects accessibility and visibility within an office, and may thereby affect individual and organizational behaviors, user attitudes and perceptions of the work

environment. The nature and importance of these effects are discussed in the environment-behavior literature (for a review see de Croon et al, 2005; McCoy, 2002; Rashid and Zimring, 2005).

The impact of physical distance is an important theme across workplace research. As physical distance increases, the likelihood of collaboration decreases (Olson and Olson, 2000). Olson et al. (2002) report that radical collocation doubled the productivity of software engineers by increasing the team's ability to monitor and learn from one another's work. Early studies exploring the link between space and work processes focused on the effects of linear or geometric distance on processes such as communication. An important prerequisite for collaboration and innovation, the classic work of Allen (1977) addressed the effect of spatial distance on communication. Allen documented the famous "Allen curve" based on research in R&D facilities showing the rapidly declining likelihood of communication between two engineers as the distance between their offices increased. Allen concludes that spatial layout influences the informal communication networks critical to creativity within organizations. Allen (2000, p. 153) found that this type of communication is "the most unpredictable and most difficult . . . to manage. It is also the most affected by architecture. Since most of this communication occurs during chance encounters, architecture can strongly promote or impede such occurrences."

Principles of spatial organization affect the generation and distribution of movement patterns in space, space use, and the ways in which occupants encounter others in space (Grajewski, 1993; Hillier and Penn, 1991; Peatross and Peponis, 1995; Penn et al, 1999; Peponis, 1985; Peponis & Wineman, 2002; Rashid et al., 2006; Serrato and Wineman, 1999). Spatial layout either can reinforce the separation of knowledge areas or can create a 'generative' spatial system, one that influences how individuals come into contact with others in the organization (Hillier and Penn, 1991) and creates opportunities for the serendipitous encounters promoted by Peters and Waterman (1981).

In exploring how spatial layouts connect individuals across the organization, it becomes clear that particular layouts of offices and corridors set up patterns of both accessibility and visibility. Layouts may concentrate movement along a few primary pathways or distribute movement across multiple access routes,



Open office environment in CREATE (credit: Perkins+Will / CREATE)

cluster movement locally or enhance global movement. Similarly, spatial layouts create patterns of co-visibility (the extent to which one workstation can see others, and visa-versa). Research suggests (Rashid et al.; 2006) that co-visibility is a strong predictor of face-to-face interaction. Studies have demonstrated the potential of layout and the provision of shared spaces to influence the intensity of interactions (Pentland, 2012; Peponis et al., 2007), and has demonstrated associations between spatial layout and productivity/innovation work outcomes (Pentland, 2012; Peponis et al, 2007; Wineman et al, 2009; 2014).

Proponents of open office planning have suggested that the removal of barriers (walls, doors, hallways) will enhance communication, job satisfaction and work performance. Based on studies of the positive effects of proximity, this would appear to be true. However, research studies of open plan offices often indicate the opposite. In a study of architectural correlates of job satisfaction and job performance, Sundstrom et al (1980) suggested that physical barriers are associated with psychological privacy, and a sense of privacy improves job performance. Kim and de Dear (2013) conclude that many workers in open plan offices are frustrated by distractions, most often reported as the lack of sound and visual privacy, and that these distractions can lead to poor work performance. Audio distractions have been found to impair cognitive performance (Perham et al., 2013). Furthermore, Perham and colleagues found that listening to music (headphones) to block out office

noise also diminishes mental acuity. Of particular concern appears to be noise caused by irrelevant but audible and intelligible speech from co-workers. Several studies document the disturbance and negative effects on the performance of tasks requiring cognitive processing (Banbury and Berry, 2005; Haka et al, 2009; Smith-Jackson and Klein, 2009; Virjonen et al, 2007).

On the other hand, sound in the workplace can have positive effects. For example, sound transfer among team members who are working on a shared task has the potential to provide positive performance gains. Team members overhear one another discussing process and offer helpful advice or collectively work on problem solving. Teams who focus on shared problem solving are most likely to benefit from this situation. Research results with development teams confirm this finding (Olson et al, 2002).

Sometimes organizational processes are often aligned to create the teaming strategies that allow for this overhearing in order to improve performance. Paired programming is an example of a workstyle where this is a clear benefit. The challenge is when sound becomes noise. The difference is the relative value of the information overheard.

Noise comparatively suggests interruptions to a process in progress. A noise is not part of an ongoing conversation but instead a challenge to that conversation. As such it represents an environmental stressor. To that end, sound and noise should be treated distinctly.

There are a number of factors that contribute to these findings. First, although the physical proximity and increased visual access provided in open offices should enhance communication, open plan offices may lack the visual and auditory privacy that individuals need to develop stronger, more lasting relationships or to carry out 'heads down' work tasks. Many times a move to an open plan office is accompanied by an increase in physical density, more workers are accommodated in the same overall square footage. This increase in physical density allows a worker to be in closer proximity to other workers, but also results in associated increases in noise levels, visual distractions and loss of privacy.

In planning the workplace, it is important to consider the nature of the tasks involved, and the extent to which these job requirements benefit from close visual and auditory contact. It

Literature Review, continued...



Breakout Area in Mission Hall, Note proximity of this casual environment to touchdown space in the rear of the photograph.

may be that open planning, or a modified open plan with small subgroupings of workspaces, is appropriate for work teams that must stay abreast of rapidly changing information or for members of a team, where team viability is dependent upon the mutual support of, and opportunities for consultation with, other team members.

Recent research identifies the critical importance of tailoring workspace design to the organization and the specific kinds of work tasks that are engaged in by different occupant groups (Wineman et al, 2014; Pentland, 2012). Pentland (2012) conducted an in-depth study of the Telenor company based on data recorded from occupant badges (who talks with who, where they go and where they spend time). Results suggested three aspects of successful communication: 'exploration' interaction with occupants across groups; 'engagement' interaction with others within your group; and 'energy' interacting with a greater number of people. Pentland concludes that depending upon the type of organization, these different communication types may be more or less important to productive outcomes, and that different spatial layouts can be more or less successful in promoting these

types of communication. Private offices are better for individual productivity and focused work while open plan space is better to support group work and team productivity.

Wineman and colleagues (2014) in a study of three different organizations found significant differences in spatial characteristics that best support productivity/innovation. A software company benefited from strong within-group connections, while an automobile manufacturer and a biotech research institute were advantaged by spatial layouts that enhanced opportunities for interactions across the organization.

Vos and Voordt (2001) emphasize that in looking toward new ways if working, it is important to critically investigate the work users actually perform, how it is distributed over time, whether workers are full-time or irregular users of the office space, and the spatial consequences of these factors. The team would also add the importance of understanding the spatial design characteristics that support different ways of working.



Engagement

Engagement is the level of enthusiasm/emotional commitment that an employee has to an organization and its values/goals.

Employee engagement is the cognitive, emotional, and behavioral resources that an employee invests toward positive organizational outcomes (Shuck & Wollard, 2010). Engagement is a mutually beneficial relationship in which the employee and employer create a psychological contract, an agreed, or presumably agreed, set of circumstances that guide expectations in the overall relationship and in the development of positive outcomes. When this contract is challenged, or worse yet, when it is broken, both employees and employers struggle.

Engagement and Work Performance

Research demonstrates that higher levels of engagement contribute to better work, less errors, employees doing more than the minimum required. (Thompson et al, 2015). Doing more than the minimum takes numerous forms including organization of activities that further work efforts or increase group cohesion as well as actively working on the workplace to improve the way that it supports their work.

Being engaged is positive for organizations as engaged employees also tend to be more productive, tend to stay with their organization longer and thus reduce turnover costs, and tend to be more positive with their clients/customers. (Saks, 2006; Harter, Schmidt, & Hayes, 2002; Shuck, Reio, & Rocco, 2011; Chalofsky, 2010). Comparatively, being disengaged, is considered quite negative for organizations (Gallup, 2012). In their most recent assessment, Gallup found that the majority of employees are either disengaged or actively working against their organizations (Gallup 2012).

Engagement and Fulfillment

Penna (2007) suggests that engagement is tied to employees' search for fulfillment, or meaning, in their work. Meaningfulness and fulfillment stem from employees perception of being valued and being appreciated as well as their sense of contribution to progress toward a goal.

Schuck and Albornoz (2008) refer to the ways in which work environments impact employee feelings of safety and meaningfulness in work. They define the work environment as the "physical and emotional characteristics of the workspace, including relationships with colleagues and typical job functions."

Maslach et al (2001) explored engagement and burnout as tied to six influential areas of work and life balance: workload, control, rewards and recognition, community and social support, perceived fairness and values. They presented engagement as "associated with a sustainable workload, feelings of choice and control, appropriate recognition and reward, a supportive work community, fairness and justice, and meaningful and valued work."

Engagement and Culture

In very early work, Schein (1987) weighed the impacts of sociocultural issues such as climate and culture on engagement. He noted that these are influences on employee engagement, defining climate as systems and satisfaction with the organization and culture as community. One variable in organizational climate is the tools with which employees work. The provision of inadequate equipment and adverse working conditions has been shown to affect employee commitment and intention to stay with the organization (Weiss, 1999; Wise, Darling-Hammond and Berry, 1987)

Thompson et al (2015) identify other stores of resources that employees rely on in order to support their engagement. They use the HERO model: Hope, Efficacy, Resiliency and Optimism. Hope relates to an employee's belief in his/her ability to affect action. In their research, hope and engagement had a statistically significant positive relationship. They flag the importance of leaders influencing hope by establishing an environment in which both interdependence and independence exist, allowing employees some degree of freedom in goal attainment. Efficacy relates to an employee's belief in his/her ability to do the work required. Knowing that one is effective increases confidence which in turn deepens engagement in the work. Leaders can influence this by providing positive feedback, providing training where needed and fostering a supportive work environment. Resiliency relates to an employee's ability to work through setbacks. Having the ability to work through challenges is strongly correlated to employee engagement. Leaders contribute to resiliency by providing support to help an employee deal with challenges. Optimism refers to an

Literature Review, continued...



Cafe Area in IDEO (credit: Perkins+Will / IDEO)

employee's likelihood of believing in a positive outcome. With a direct relationship to engagement, optimism is a powerful tool that leaders can promote through collective discussions and power-sharing behaviors in lieu of unilateral decision-making.

By applying an environmental lens to the HERO model, it is easy to see the relationship between each of the resources and their necessary environmental supports. Hope for example would be reinforced if workplace concerns were addressed and positive change was witnessed. Efficacy could be aligned with employees concerns about their ability to do their work in challenging work environments. Resiliency relates to ways in which employees might modify their environment to work through its challenges. Optimism ties to open dialogue about what does and doesn't work and how to be refine approaches to better meet shared goals. This is not highlighted in the literature per se, but certainly represents a recognizable set of issues within the workplace research intended herein.

REFERENCES

- Allen T (1977) *Managing the Flow of Technology*. Cambridge, MA: MIT Press.
- Allen T (2000) *Organizational Structure for Product Development*, Sloan School of Management, MIT, WP Number 166-97.
- Baker, N. R., Siegman, J., & Rubenstein, A. H. (1967). The effects of perceived needs and means on the generation of ideas for industrial research and development projects. *Engineering Management, IEEE Transactions on*, (4), 156-163.
- Banbury SP, Berry DC (2005), Office noise and employee concentration: Identifying causes of disruption and potential improvements. *Ergonomics* 48(1): 25–37.
- Becker F, Sims W (2001) *Offices That Work: Balancing Cost, Flexibility, and Communication*. New York: Cornell University International Workplace Studies Program (IWSP).
- Becker F, Gield B, Gaylin K, Sayer S (1983) Office design in a community college: Effect on work and communication patterns. *Environment and Behavior* 15(6): 699-726.
- Becker, F. (2002) Organizational dilemmas and workspace solutions. *Journal of Corporate Real Estate* 4(2): 129-150.
- Biggio G, Cortese CG (2013). "Well-being in the workplace through interaction between individual characteristics and organizational context". *International Journal of Qualitative Studies in Health and Well-being*. 8: 1,748 - 2,623).
- Brand JL, Smith TJ (2005) Effects of reducing enclosure on perceptions of occupancy quality, job satisfaction, and job performance in open-plan offices. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting* 49: 818–822.
- Brennan A, Chugh JS et al. (2002) Traditional versus open office design: A longitudinal field study, *Journal of Environment and Behavior* 34(3): 279-299.
- Cangelosi VE, Lemoine LF (1988) Effects of open versus closed physical environment on employee perception and attitude. *Social Behavior and Personality* 16(1): 71-77.
- Chalofsky, N. E. (2010). *Meaningful workplaces: Reframing how and where we work*. John Wiley & Sons.
- Chandrasekar, K. (2011) *Workplace Environment And Its Impact On Organisational Performance In Public Sector Organisations*. *International Journal of Enterprise Computing and Business Systems (Online)* <http://www.ijecbs.com> Vol. 1 Issue 1 January.
- Cross R, Parker A et al. (2002) Making invisible work visible: Using social network analysis to support strategic collaboration. *California Management Review* 44(2): 25-46.
- Csikszentmihályi M. (1997) *Finding flow: The psychology of engagement with everyday life*. New York, NY: Basic Books
- Danielsson CB, Bodin L (2009) Difference in satisfaction with office environment among employees in different office types. *Journal of Architectural and Planning Research* 26(3): 241-257.
- Davis MC, Leach DJ, Clegg, CW (2011) The physical environment of the office: Contemporary and emerging issues. *International Review of Industrial and Organizational Psychology*, 2011, 26: 193-237.
- De Croon E, Sluiter J et al. (2005) The effect of office concepts on worker health and performance: A systematic review of the literature. *Ergonomics* 48(2): 119-134.
- Faragher, E.B., Cass, M., and Cooper, C.L. (2005) The relationship between job satisfaction and health: a meta-analysis. *Occupational Environment Medicine* 62: 105-112
- Frontczak M, Schiavon S, Goins J, Arens EA, Zhang H, Wargocki P (2012) Quantitative relationships between occupant satisfaction and satisfaction aspects of indoor environmental quality and building design. *Indoor Air Journal* 22(2): 119-131.
- Gifford R (1997) *Environmental Psychology: Principles and Practice*. Canada: Optimal Books.
- Grajewski T (1993) *The SAS head office: spatial configuration and interaction patterns*. Nordisk Arkitekturforskning.
- Guest D, Conway N. (2002) The psychological contract at work and its effects on health and well-being. In: Schabracq M, Winnubst J, Cooper C, editors. *Handbook of Work and Health Psychology*. 2nd ed. Chichester: John Wiley; 143–158

Literature Review, continued...

- Haka M, Haapakangas J, Keranen J, Hakala J, Keskinen E, Hongisto V (2009), Performance effects and subjective disturbance of speech in acoustically different office types – A laboratory experiment. *Indoor Air* 19(6): 454–467.
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87(2), 268-279
- Hillier B, Penn A (1991) Visible colleges: Structure and randomness in the place of discovery. *Science in Context* 1(4): 23-49.
- Isen A. M. (1987) Positive affect, cognitive processes, and social behaviour. In: Berkowitz L, editor. *Advances in experimental social psychology*. San Diego, CA: Academic Press; 203–253.
- Jahncke H, Hygge S, Halin N, Green AM, Dimberg K (2011) Open-plan office noise: Cognitive performance and restoration. *Journal of Environmental Psychology* 31: 373-382.
- Kabo F, Cotton-Nessler N, Hwang Y, Levenstein MJ, Owen-Smith J (2014) Proximity effects on the dynamics and outcomes of scientific collaborations. *Research Policy* 43(9): 1469-1485.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33 (4), 692-724.
- Kaufman L (2014) Google got it wrong. The open office trend is destroying the workplace. *The Washington Post*, December 30, 2014.
- Kim J, de Dear R (2013) Workspace satisfaction: The privacy-communication trade-off in open-plan offices. *Journal of Environmental Psychology* December 36: 18-26.
- Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford: Oxford University Press.
- Leaman A, Bordass B (2007) Are users more tolerant of 'green' buildings? *N'Building Research & Information* 35(6): 662–673.
- Leblebici, D. (2012) Impact Of Workplace Quality On Employee's Productivity: Case Study Of A Bank In Turkey *Journal of Business, Economics & Finance* (2012), Vol.1 (1)
- Maarleveld M, De Been I (2011) The influence of the workplace on perceived productivity. *EuroFM Research Symposium, Vienna Austria*.
- Maslach, C., Schaufelli, W.B. and Leiter, M.P. (2001). 'Job burnout', *Annual Review of Psychology*, Vol 52: 397-422.
- Marans RW, Spreckelmeyer KF (1982) Evaluating open and conventional office design. *Environment and Behavior* 14(3): 333-351.
- McCoy JM (2002) Work environments. In RB Betchel, A Churchman (Eds.). *Handbook of Environmental Psychology*. New York: Wiley; 443-460.
- Mittleman D (1996) The impact of physical environment on performance and satisfaction in the white collar office: An overview of the literature. *Proceedings of the IFIP 8.4 Conference on the International Office of the Future*. Tuscon AZ.
- Nemecek J, Grandjean E (1973) Noise in landscaped offices. *Applied Ergonomics* 4(1): 19-22.
- O'Boyle, E., & Harter, J. (2013). *State of the American workplace: Employee engagement insights for US business leaders*. Washington, DC: Gallup.
- Oldham GR, Brass DJ (1979) Employee reactions to an open-plan office: A naturally occurring quasi-experiment. *Administrative Science Quarterly* 24: 267-284.
- Oldham, G. R., Cummings, A., & Zhou, J. (1995). The spatial configuration of organizations: A review of the literature and some new research directions. *Research in personnel and human resource management*, 13, 1-37.
- Olson GM, Olson JS (2000) Distance matters. *Human Computer Interaction* 15:139 178.
- Olson, JS, Teasley S, Covi L, Olson GM (2002) The (currently) unique value of collocated work. In S. Kiesler and P. Hinds (Eds.) *Geographically Distributed Work*. Academic Press: Cambridge, MA.

- O'Neill MJ, Carayon P (1993) Relationship between privacy, control, and stress responses in office workers. *Proceedings of the Human Factors and Ergonomics Society 37th Annual Meeting* 37: 479–483.
- Peatross FD, Peponis J (1995) Space, education and socialization. *Journal of Architectural and Planning Research* 12(4): 366-385.
- Pejtersen, JH, Feveile H, Christensen, KB, Burr H (2011) Sickness absence associated with shared and open-plan offices – a national cross sectional questionnaire survey. *Scand J Work Environ Health*, Sep 37 (5): 376-82.
- Pelz DC, Andrews FM (1966) *Scientists in Organizations: Productive Climates for Research and Development*. Ann Arbor, MI: Institute for Social Research.
- Penn A, Desyllas J, Vaughan, L. (1999) The space of innovation: interaction and communication in the work environment. *Environment and Planning B: Planning and Design* 26(2): 193-218.
- Penna (2007). *Meaning at Work Research Report*, http://www.penna.com/contentfiles/penna/content/research/e7031f6c-e95e-49ba-9ecc-fad74a0829ec/meaning_at_work.pdf, Accessed on 20 December, 2012
- Pentland, A (2012) The new science of building great teams. *Harvard Business Review* April: 61-70.
- Peponis J, Bafna S et al. (2007) Designing space to support knowledge work. *Environment and Behavior* 39(6): 815-840.
- Peponis J, Wineman J (2002) The spatial structure of environment and behavior: Space syntax. In R Bechtel, A Churchman (Eds.), *Handbook of Environmental Psychology*. New York: John Wiley, 271-291.
- Peponis J (1985) The spatial culture of factories. *Human Relations* 38:357-390.
- Perham N, Hodgetts H, Banbury S (2013) Mental arithmetic and non-speech office noise: an exploration of interference-by-content. *Noise Health* Jan-Feb 15(62): 73-78.
- Peters TJ, Waterman RH (1981) *In Search of Excellence: Lessons from America's Best-Run Companies*. New York: HarperCollins.
- Rashid, M., Kampschroer, K., Wineman, J., & Zimring, C. (2006). Spatial layout and face-to-face interaction in offices—a study of the mechanisms of spatial effects on face-to-face interaction. *Environment and Planning B: Planning and Design*, 33(6), 825-844.
- Rashid, M., Zimring, C., Wineman, J., Flaningam, T., Nubani, L., & Hammash, R. (2005, June). The effects of spatial behaviors and layout attributes on individuals' perception of psychosocial constructs in offices. In *Proceedings of the Fifth International Space Syntax Conference* (p. 71).
- Reagans R, Zuckerman EW (2001) Networks, diversity and productivity: The social capital of corporate R&D teams. *Organizational Science* 12(4): 502-517.
- Rubinstein S (2000) The impact of co-management on quality performance: The case of the Saturn organization. *Industrial and Labor Relations Review* 53(2): 197-218.
- Rulke DL, Galaskiewicz J (2000) Distribution of knowledge, group network structure and group performance. *Management Science* 46(5): 612-626.
- Ryan, R.M. and Deci, E (2001) On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-being. *Annual Review of Psychology* 52:141-66.
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600-619.
- Schein, E. H. (1983). *Organizational Culture: A Dynamic Model* (No. TR-13-ONR). Alfred P. Sloan School Of Management. Cambridge, MA.
- Shuck, B., & Albornoz, C. (2008). Exploring employee engagement among three non-salaried employees: A phenomenological study. In M. S. Plakhotnik & S. M. Nielsen (Eds.), *Proceedings of the Seventh Annual College of Education Research Conference: Urban and International Education Section* (pp. 138-143)
- Shuck, B and Reio, T. (2013) Employee Engagement and Well-being: A Moderation Model and Implications for Practice. *Journal of Leadership & Organizational Studies*.

Literature Review, continued...

- Shuck, B., Reio Jr, T. G., & Rocco, T. S. (2011). Employee engagement: An examination of antecedent and outcome variables. *Human resource development international*, 14(4), 427-445.
- Shuck, B., & Wollard, K. (2010). Employee engagement and HRD: A seminal review of the foundations. *Human Resource Development Review*, 9(1), 89-110.
- Serrato M & Wineman J (1999) Spatial and communication patterns in research and development facilities. In L Amorim, F Dufaux (Eds.), *Proceedings of the Second International Space Syntax Symposium*, Brasilia, Brazil, 11.1-11.8.
- Shilling CW, Bernard JW (1964) *Informal Communication Among Bio Scientists*. Report 16A-64. Washington, D.C.: Biological Sciences Communication Project, George Washington University.
- Smith-Jackson TL & Klein, KW (2009) Task performance and mental workload. *Journal of Environmental Psychology* 29: 279-289.
- Sparrowe, R. T., Liden, R. C., Wayne, S. J., & Kraimer, M. L. (2001). Social networks and the performance of individuals and groups. *Academy of management journal*, 44(2), 316-325.
- Sundstrom, E (1987) *Work environments: offices and factories*. In D Stokols, I Altman (Eds.), *Handbook of Environmental Psychology*. New York: Wiley.
- Sundstrom, E (1986) *Work Places: The Psychology of the Physical Environment in Offices and Factories*. New York: Cambridge University Press.
- Sundstrom E, Altman I (1989) Physical environments and work-group effectiveness. In LL Cummings, B Straw (Eds.), *Research in Organizational Behavior* 11. Greenwich, CT: JAI Press, 175-209.
- Sundstrom, E., Burt, R. E., & Kamp, D. (1980). Privacy at work: Architectural correlates of job satisfaction and job performance. *Academy of Management Journal*, 23(1), 101-117.
- Sundstrom E, Town J, Rice R, Osborn D, Brill M (1994) Office noise, satisfaction and performance. *Environment and Behavior* 26(2): 195-222.
- Thompson, K. R., Lemmon, G., & Walter, T. J. (2015). Employee Engagement and Positive Psychological Capital. *Organizational Dynamics*, 44(3), 185-195.
- Veitch JA, Charles KE, Farley KMJ, Newsham GR (2007) A model of satisfaction with open-plan office conditions: COPE field findings. *Journal of Environmental Psychology* 27(3): 177-189.
- Virjonen P, Keranen J, Helenius R, Hakala J, Hongisto OV (2007) Speech privacy between neighboring workstations in an open office – A laboratory study. *Acta Acustica united with Acustica*, 93(5): 771-782.
- Vos, P, Voordt, T van der (2001) Tomorrow's offices through today's eyes: The effects of innovation in the working environment. *Journal of Corporate Real Estate*, 4(1): 48-65.
- Warr P. (1999) Well-being and the work place. In: Kahneman D, Deiner E, Schwarz N, editors. *Well-being: The foundations of hedonic psychology*. New York, NY: Russell Sage; 302-412.
- Wineman, JD (1982) *Environmental stressors in the office setting*. Environmental Stress, GW Evans (Ed.) New York: Cambridge Press, 256-285.
- Wineman, J., Hwang, Y., Kabo, F., Owen-Smith, J., & Davis, G. F. (2014). Spatial layout, social structure, and innovation in organizations. *Environment and Planning B: Planning and Design*, 41(6), 1100-1112.
- Wineman J, Kabo F, Davis G (2009) Spatial and social networks in organizational innovation. *Environment & Behavior Journal* 41(3): 427-442.
- Wineman JD, Serrato M (1999) Facilities design for high-performance teams. In E Sundstrom and Associates (Eds.), *Supporting Work Team Effectiveness*. San Francisco, CA: Jossey-Bass Publishers, 271-298.
- Woods, C. (2010) Employee well-being in the higher education workplace: a role for emotion scholarship, Published online: 9 December 2009, Springer Science+Media, 171-185.

Young, HH, Berry GL (1979) The impact of environment on the productivity attitudes of intellectually challenged office workers. *Human Factors* 21(4): 399-407.

Zalesny, MD, Farace, RV (1987) Traditional versus open offices: A comparison of sociotechnical, social relations, and symbolic meaning perspectives. *Academy of Management Journal* 30: 240–259.



View to entry courtyard from Mission Hall

3

WORKPLACE RESEARCH STUDY

Findings



IN THIS CHAPTER

- ▶ Overview
- ▶ Faculty and Staff Typologies
- ▶ Site tour Summaries
- ▶ Benchmarks
- ▶ Interviews/Focus Groups/Survey
- ▶ Survey Results
- ▶ Time Utilization Study
- ▶ Occupancy Analysis
- ▶ Summary of Indicators

Overview

THE FINDINGS FROM THIS STUDY INCLUDE:

- **Faculty and Staff Typologies**
A summary of the major types of users and work patterns present in the Mission Hall facility.
- **Site Tour Summaries**
A summary of field observations of users' previously occupied buildings before moving to Mission Hall and the initial observations following the opening of Mission Hall.
- **Benchmarks**
A comparison of recent projects at peer institutions as well as two representative ABW projects within a medical center context.
- **Interviews/Focus Groups / Survey**
A detailed explanation of the user needs and concerns expressed during focus groups and interviews, including related responses in the survey results.
- **Survey**
A summary of survey participation and key takeaways, using descriptive statistics and regression analysis.
- **Time Utilization Study**
A summary of the patterns of use of Mission Hall across two separate studies in the Spring and Fall of 2015, including outcomes from Spatial Analysis comparison.
- **Occupancy Analysis**
An analysis of environmental factors contributed to the results of Time Utilization Study.
- **Conclusions**
A summary of conclusions for future projects and for future adjustments in Mission Hall.

Faculty and Staff Typologies

Beginning in September/October 2014, the team conducted the first round of focus groups and interviews with UCSF Faculty and Staff who would be moving to Mission Hall. These were targeted to the mid/late October moves which represented the first occupancy of Mission Hall. In November, the team conducted a second round, targeted to the December/January/February moves. These represented the majority of occupants moving into Mission Hall.

These focus groups and interviews provided Faculty and Staff perspectives about their current and future work environments, and a glimpse into the various typologies of Faculty and Staff. In order to evaluate the extent to which the environment supports the work of Faculty and Staff, it is critical to understand the roles of various occupant groups (for example, whether they

occupy other office/clinic space in addition to Mission Hall) and the kinds of tasks in which they engage at Mission Hall. These typologies offer insight into the interpretation of initial findings.

The team identified five major typologies:

- **Clinical Faculty**
- **Research Faculty**
- **Clinical Staff**
- **Research Staff**
- **Post Docs**

CLINICAL FACULTY

Clinical Faculty spend the largest amount of time working outside of traditional office settings, most often in the clinic or hospitals, sometimes at multiple UCSF locations. Individual workspace ranks as the second most visited location, followed closely by collaborative workspace used for meetings. Clinical Faculty feel that they are the least likely to utilize Mission Hall, largely attributable to the short duration of breaks in their work days and the absence of dedicated, private space in the new environment.

Clinical Faculty practicing in the Mission Bay campus anticipated the sum of clinic/hospital elevator travel, street level crossing and Mission Hall office elevator travel would be greater than the duration of typical breaks between scheduled activities.

Clinicians place a high value on proximity to private space associated with the existing model of private Faculty offices, which offers a place for decompression between sometimes intense clinical activities, as well as a workspace for focused work such as writing papers, research, email correspondence and completing clinical notes.

RESEARCH FACULTY

Research Faculty spend the majority of their time in traditional office settings including offices, meeting space, and other support spaces as opposed to clinic, hospital, or other non-UCSF spaces. Research Faculty spend time in individual workspace primarily in focused work related to research, grant-writing and writing for publication. However, they are almost equally likely to use collaborative workspace and engage in meetings as well as spend time teaching in classrooms. The ability to have a quiet and sometimes secluded environment is highly valued. Research Faculty are also very mobile and may work from home in order to avoid distraction, particularly for writing activities. Data intensive work places a high importance on physical hardware and technology infrastructure to be available and reliable.

CLINICAL STAFF

Clinical Staff spend the majority of their time working in traditional office settings. However compared to Research Staff, Clinical Staff work in a far greater range of spaces over the day including within clinic space, classrooms or hospital settings. Clinical Staff may have a direct role in the clinic or hospital, but support clinicians with patient scheduling (often by phone) and updating Clinical Faculty schedules. Clinical Staff report a high percentage of time spent at individual workspaces, followed by collaborative workspace and time in meetings. Those based outside the clinic or hospital setting place greater reliance on digital communication with Faculty to keep them updated on appointments and locations.

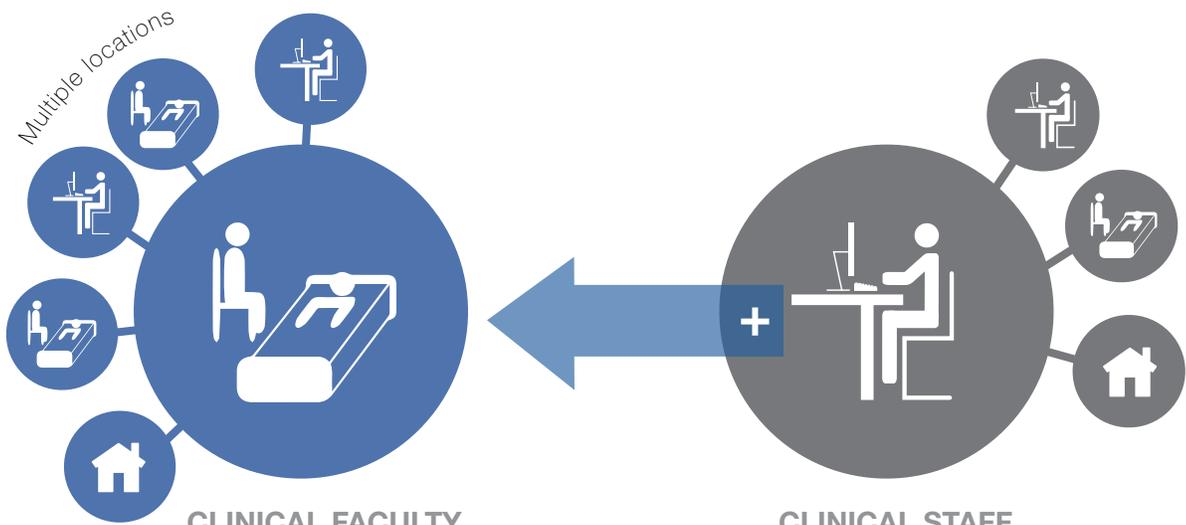
The job of Clinical Staff depends on technology infrastructure, hardware and software. Access to Faculty is also valued by Staff who must expedite required signature of documents. Intradepartmental collaboration provides mutual support in Staff groups to maintain efficient workflow.

RESEARCH STAFF

To some extent, Research Staff exhibited similar work style tendencies as Clinical Staff. Research Staff spend the majority of their time in traditional office settings, such as workstations, Conference Rooms, and other support spaces. Research Staff spend the greatest portion of a typical week in individual workspace, supporting Research Faculty and projects, with some meeting and collaboration activity. Similar to Research Faculty, Research Staff are often engaged in focused work and value a quiet workspace. External communication responsibilities involve both email and phone conversation, which represents a noise and activity level that may be at odds with both Staff co-workers and Research Faculty.

POST DOCS

Engagement with Post Docs was limited although all assigned to Mission Hall were invited. The research team tried to collect profile information in the post occupancy phase. Participation was extremely limited however. No clear pattern was identified.



CLINICAL FACULTY

- Sees patients in clinic or hospital
- Short breaks between patient visits so proximity is important

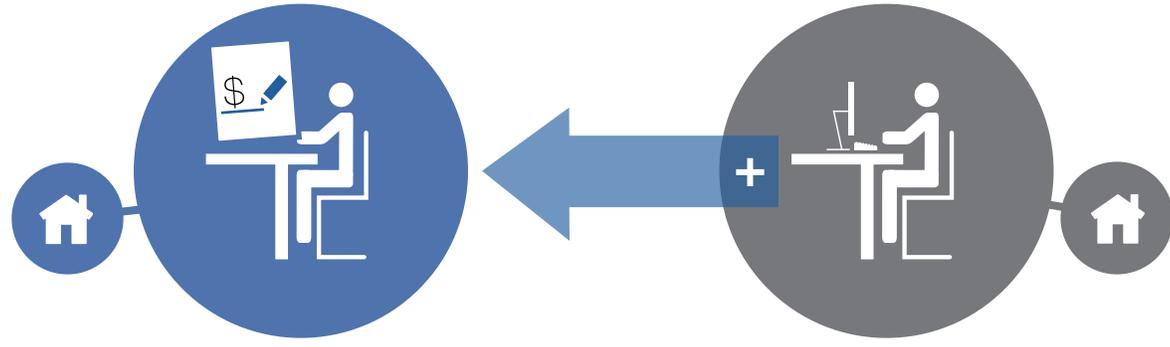
CLINICAL STAFF

- Support clinicians through administrative tasks
- Sometimes in clinic or hospital, sometimes in office



POST DOCS

- Depending on assignment, may be in clinic or hospital or doing research in office



RESEARCH FACULTY

- Does not see patients per se
- Sometimes sees research subjects
- Often focused on research development or grant application

RESEARCH STAFF

- Support research Faculty through administrative tasks
- Typically in the office

Site Tour Summaries

With the definitions of Faculty and Staff types in mind, the team toured the various locations to better understand where these respondents worked. In reviewing the locations list from the move matrix provided by UCSF, the team identified Beale, Berry, Laurel Heights, Parnassus Heights and Mt. Zion as the key locations to visit. While other locations would have programmatic differences, it appeared that these five locations would offer the range of space typologies representative of the broader School of Medicine population.

In September/October, the team conducted tours starting with the October relocations. These tours were primarily orientations to the environments that occupants would be leaving, to set context and to understand references for feedback in interviews/focus groups.

Facilities observed included (see Figure 02):

- ★ **50 Beale Street** (*appx. 1.5 miles from Mission Hall*)
- ★ **185 Berry Street** (*appx. 0.75 mile from Mission Hall*)
- ★ **Laurel Heights** (*appx. 3.25 miles from Mission Hall*)
- ★ **Parnassus** (*appx. 3.75 miles from Mission Hall*)
- ★ **Mount Zion** (*appx. 2.75 miles from Mission Hall*)

The team conducted a series of observational studies in order to understand basic utilization patterns of individual workspaces including offices and workstations, collaborative workspaces, including Conference Rooms and informal collaboration spaces including circulations spaces, lobbies, and other open collaboration zones.

Observations began at a time of significant change for the occupants of the buildings. It was evident to observers that many occupants had already begun the move process or moved out of their current workspaces altogether leading up to the move in to Mission Hall. As a result, these studies reflect departments in the process of change rather than their typical day-to-day operations. This pattern of occupancy was also reiterated in focus groups conducted with a cross section of Faculty and Staff. Many Faculty and Staff articulated that they had already begun to work from home or in other locations in preparation for the move.

The map at right, as taken from the UCSF website, illustrates the various locations that UCSF operates. It serves as a reference, as needed, for the locations described in the following section on Site Tours. It also helps to contextualize the campus locations relative to one another for those respondents who work in multiple locations.



Figure 02 Map of UCSF locations in San Francisco (Source: UCSF)

WORKSPACE TYPOLOGIES

The previous workspaces for the SoM Faculty and Staff who are moving to Mission Hall fall into two general categories: Academic Office and Combined Office/Clinical/Hospital.

ACADEMIC OFFICE

Academic Office space, such as 50 Beale, 185 Berry and Laurel Heights, included a combination of enclosed offices, workstations and support spaces such as conference, pantry and reception. Laurel Heights also includes some additional research labs, but as research labs were not included at Mission Hall, those facilities were not included in the comments here.

Key takeaways were:

- The enclosed offices were primarily on the perimeter of the buildings while workstations and support spaces were primarily on the interior. At Laurel Heights, there were also suites of offices and workstations.
- These office spaces emphasized privacy over communal environments as both observation and occupant feedback noted little to no community spaces [such as a common lounge].
- These locations were notably quiet and in some cases included signage reminding occupants to maintain that quiet. Between the signage guiding behavior and the lack of communal and informal collaboration space, there were few noise-generating activities in the general office space.
- Daylighting was limited due to the perimeter officing. As a result, these environments varied extensively in terms of the lighting quality that occupants experienced. Electric lighting, while serviceable, was not optimal for office work.
- While most Faculty enjoyed some type of view due to their perimeter offices, few Staff had this amenity.
- Informal collaboration space was not evident. Faculty noted that collaboration spaces were requested on earlier build-outs, but were not provided. When asked about how, or if, collaboration happened, respondents noted that collaboration occurred in the enclosed offices primarily.

- While security protocols varied depending on the locations, all locations required visitors to have some level of engagement with building security and/or reception before proceeding into the work environment.
- Technologies varied from individual laptops to more traditional desktop machines. Few occupants used headsets or other bluetooth technologies. Conference rooms were typically outfitted with the basics of speaker phones and projectors/screens if any technology at all.
- Research Faculty office occupancy appeared to peak from late morning to early afternoon. Staff comparatively appeared to be onsite for the majority of the day.
- Storage seemed to be under control in the academic offices. There were few comments about storage challenges at these locations.
- Building systems appeared to maintain thermal comfort.

COMBINED OFFICE/CLINICAL/HOSPITAL

Combined Office/Clinical/Hospital space refers to environments in which the academic offices as described above are embedded within a Clinical or hospital facility. This is a stark comparison to the purely academic office environments at Beale, Berry and Laurel Heights. Mt. Zion and Parnassus represented these general characteristics.

- In the combined environments, a particular department or subgroup of a department typically resides in a series of suites. These suites tended to have perimeter offices and interior workstations and support spaces such as conference, pantry and reception. In comparison to Beale, Berry and Laurel Heights, all visited combined areas were quite densely populated, demonstrating that these UCSF departments were space-constrained.
- Again daylighting was limited due to the perimeter officing. A number of Staff had little to no access to the perimeter of the buildings and thus had no exposure to the exterior views or daylight. Electric lighting, while serviceable, was not optimal for office work.
- While most Faculty enjoyed some type of view due to their perimeter offices, few Staff had this opportunity.



Aerial Image of Parnassus Campus (Source: UCSF)

- Informal collaboration space was not evident. Most departments were spatially constrained and so lacked the ability to introduce informal environments.
- Security protocols varied as in the Academic Office space. For example, not all departments had badge access requirements.
- Technologies varied similarly. However, within the combined spaces, the team noted more specialized equipment and more obvious storage demands for research samples and paperwork.
- As in the academic offices, Research Faculty office occupancy appeared to peak from late morning to early afternoon, but Clinical Faculty occupancy peaked earlier ahead of the beginning of Clinical visits. Staff comparatively appeared to be onsite for the majority of the day.
- Storage was a challenge for most groups. Faculty, who held significant libraries and paper resources in their offices, and Staff, who were typically in workstations or shared offices, frequently commented on challenges with storage.

- Building systems appeared to be inadequate to meet demand loads for typical officing. During the tours it was apparent that the environments were not maintained for thermal comfort. On a particularly warm day, the workspaces were stifling. This speaks to a possible balancing issue between clinical space and office space, or it may have to do with the thermal performance of the building envelope.

The team consistently heard about the advantages of workspaces being directly connected to the hospital space. The walk time between facilities was described as an issue that would need to be re-thought in the new Mission Hall space. Specifically, the adjacency of workspace to hospital space and the positioning and movement of equipment might prove to be a challenge with Mission Hall and the new hospital on the Mission Bay Campus.

In some locations, Clinical Faculty gathered in corridors or suites adjoining hospital/Clinical space. These areas functioned as shared workspaces, with computers located around the perimeter of the room or area. These areas were described as staging areas where Clinical Faculty would move in-between engagements with patients. Some Clinical Faculty described



Laurel Heights Campus (Source: UCSF)

these as important informal interaction space. This is a notable difference from the lack of informal interaction space in the Academic Office spaces and more importantly, the lack of demand voiced for informal space.

EXPECTATIONS GIVEN PREVIOUS WORKPLACES

These two typologies reflect the majority of the workplace contexts that Mission Hall occupants previously occupied. These contexts represent familiar ways of working and so in changing from these familiar environs to Mission Hall, the following reactions might be expected.

- Faculty moving from private offices to open workstations may struggle with balancing heads-down, focused work and the opportunities to collaborate with one another and Staff.
- Similarly in relocating from the perimeter office to the open office, Faculty may express concern about lack of view.
- Noise generated by general office activities and shared conversations may become a new stressor as occupants deal with the increased sound volume as compared to their previous workspaces.
- Improved access to daylighting and views to the outside may be more comfortable for Staff. Improved overall lighting may be more comfortable for all occupants.
- Availability of informal collaboration spaces in Mission Hall may be of great value to those departments that have previously encouraged this type of exchange. Comparatively, these spaces may not provide immediate value for those departments that expressed no demand for this type of exchange.
- Given previous experiences with security protocols, Faculty and Staff may express frustration with security protocols at Mission Hall. While the badging system is straightforward, it introduces an extra step to most occupants. It also requires visitors between floors and into the building to be badged accordingly or be escorted.

- As technologies in the previous locations were not exemplary for working environments, Faculty and Staff may need new technologies to take advantage of ABW.
- Faculty and Staff will need to be trained on the new technologies.
- Faculty and Staff's work methods will change with the new space and technologies.
- With the building systems improvements in Mission Hall, occupants may notice improved comfort across a variety of environmental indicators. On the other hand, there may be increased stressors as systems are balanced during the early weeks or months of the move. For example, engineers frequently receive calls about rebalancing of set points and air flows following initial occupancy of environments.
- Storage at Mission Hall is noticeably limited. For respondents who were already storage-challenged with personal materials, Mission Hall will require significant editing. Faculty voiced concern frequently about losing access to their research resources. For respondents who were managing samples in various ways, there is a real dilemma about both where to store those samples and how to maintain control of those samples. These materials were located in their workspace prior to the move to Mission Hall. How and where these samples will be stored and transported between workspace and clinical space, and how it will impact day-to-day work, may provide challenges for some Faculty and Staff.
- There is a challenge of incorporating specific equipment into this new workspace. Some Faculty are unsure of how new equipment previously used in combined office, clinical/hospital settings will be incorporated. This includes equipment that previously resided in workspaces but was positioned near clinical space. A change of use and potential training might be required for equipment used by specific departments, including imaging technology and devices for patient testing. Many departments had spaces dedicated for this equipment located in non-clinical areas.
- Initial feedback from respondents suggests that Faculty will come to the facility less than they did in their previous locations as they expect to experience more distractions.
- For the occupants who are coming from Academic Office environments, it is likely that their use of office space at Mission Hall may vary based on their comfort in the new environment. They will have their colleagues collocated, but will no longer have the control of the private office and the smaller suites. Comfort will most likely be defined by the ability to conduct work in the open environment.
- Comparatively, for the Clinical Faculty who have responsibilities at either the Clinic or Hospital, there will likely be less use of Mission Hall than previous environments, but for a very different reason. Numerous Faculty described the quick access between workspace and clinic or hospital space as a key functional requirement. With the previous environments, proximity was a given for the most part. With the new environment, occupants have a walk between clinic and hospital and Mission Hall. The walk time, approximately ten minutes, does not fit work requirements. For example, certain Faculty described the need to be available for quick consults following a patient engagement. The time required to travel between the patient space and the Mission Hall workspace is greater than the time that the Faculty have. As a result, Faculty must find places to work at the hospital in order to be close enough for quick responses.

Site Tour Summaries, continued...



Berry Street Building (Source: UCSF)



UCSF Medical Center at Mount Zion (Source: Susan Merrell/UCSF)



View of Mission Bay Campus (Source: UCSF)

Benchmarks

APPROACH

As a part of the research, the team examined a set of benchmark comparisons for two sets of institutional work environments. The intent was to demonstrate how the Mission Hall workplace compared in terms of space composition and space per occupant to other recently-completed comparative buildings.

First, the team compared recent medical building projects at peer institutions. Then, to address in more detail the concept of ABW as it has been applied at Mission Hall, the team examined comparative metrics for four recently completed ABW work environments for medical-related units.

Selection Process

The team identified relevant facilities by starting with UCSF's competitive peer group of top-tier medical schools. Within that group, the team identified those with recently-built facilities by cross-referencing the list against industry journals and the institutions' own facilities updates. The search was limited to buildings that have been constructed in the past five years.

Of the recently-built facilities, the team identified the administrative and departmental office spaces with similar functions to Mission Hall. This search resulted in three relevant projects for comparison from within UCSF's peer group.

The peer institutions for the study are:

- Duke School of Medicine: Trent Semans Center
- Stanford School of Medicine: Li Ka Shing Center
- UCLA: Teaching and Learning Center for Health Sciences

Because none of these facilities employed an ABW approach, the study was expanded to include ABW facilities from outside the peer group.

Other ABW Medical Environments

To identify relevant ABW examples outside the peer group, the team sought feedback from within UCSF and within its own network as well as from published findings available through industry journals or industry events.

From these resources, the team identified four relevant ABW examples. These examples include office spaces for other hospitals built with ABW principles.

- Beth Israel Deaconess Medical Center
- Seattle Children's Hospital
- UC80 at Parnassus
- Confidential Healthcare Provider

These were relevant medical environments and ABW workplaces. These environments represented pilot studies of ABW within a larger healthcare setting.

Comparative Metrics

Comparisons were made on the basis of the following building metrics (all comparisons are based on averages for office floor(s)):

- Average floor size (SF)
- Overall composition (% of assigned space) – average size of individual assigned workspace; shared individual workspace; meeting; socializing; support; circulation
- Workspace composition (% of assigned space) - individual assigned workspace, shared individual workspace, enclosed meeting space, open meeting space
- Space per occupant (SF) – average size of individual assigned workspace; shared individual workspace; enclosed meeting space; open meeting space

Particularly the ABW comparisons allowed the team to understand how the development of this workplace solution may be similar or different from other examples. Differences, such as less space per person, may suggest areas that potentially impact outcome measures, such as perceived satisfaction and levels of occupancy.

Space Composition Scheme

The Space Composition Scheme (Figure 03) identifies different space types that relate to workplace design and ABW in particular. This categorization allowed the team to look at comparisons by space type for each of the benchmark buildings in terms of the average percentage allocation of different types of space per floor and the average square footage of those space types. Since the research focus was on the workplace, the team did not include structural space, student facilities and learning spaces or any unidentified spaces.

The broad set of space-type categories included:

- All individual workspace (assigned or shared)
- Collaborative workspace (meeting)
- Socializing space
- Support space
- Circulation

Individual workspace included all individually assigned workspace, either enclosed (closed office) or open (open workstation); and individual workspace that is shared with others, either enclosed (Focus Room) or open (hoteling workstation). Collaborative workspace included all enclosed meeting space (Huddle Room, conference or meeting room) and open meeting space (break-out space).

Space that was assigned to support social activity was included in socializing space, such as the Town Center, Café, kitchen, or lobby areas. Support spaces include uses such as printing areas, restrooms and storage areas. Primary and secondary circulation areas, as well as stair/elevator areas were designated as circulation space.

In Figure 03, these spatial types are color coded and clustered to represent these previous descriptions. These color codes relate to the color-coding on the floor plans for the facilities benchmarked. An example of the application of this coding to Mission Hall is shown in Figure 10. See Figure 07, Figure 08 and Figure 09 the comparative benchmark plans.

		Type	Subtype	Sub-subtype	Code	Example
Total floor area	Analyzed Space	Individual workspace	Individually assigned workspace	Enclosed	IIC	Closed Office
				Open	IIO	Workstations
			Shared individual workspace	Enclosed	ISC	Focus Room
				Open	ISO	Hoteling Workstation
		Collaborative workspace	Enclosed meeting space		CC	Huddle Room Conference Room Meeting Room
			Open meeting space		CO	Break-out Space
		Socializing space		SO	Town Center Café/Kitchen/Lobby	
		Support space		SP	Restroom Storage/Copy	
		Circulation		CI	Stair/Elevator Primary Secondary	
		Not Analyzed Space	Structural space		NA	
	Unknown					
Non-related			Student Facilities Learning Facilities			

Figure 03 Space Composition Scheme indicating how space types are counted

Benchmarks, continued...

PEER COMPARISONS

There is little precedent for a building like Mission Hall within UCSF's competitive peer group. As a result, the team compared the relevant components of the peer institution examples instead of comparing entire buildings.

- At Duke School of Medicine: The Learning Center, the team compared the departmental office space on the 4th floor of the 6-floor building.
- At Stanford School of Medicine: Li Ka Shing Center, the team compared the 3rd floor of the 5-floor building.
- At UCLA: Teaching and Learning Center for Health Sciences, the team compared the 2nd and 4th floors of the 4-floor building.

Key takeaways from this comparison:

1. All other facilities studied within UCSF's peer group provide some amount of private offices along with workstations.
2. Mission Hall provides less total workspace per person than other institutions in the competitive peer group. UCSF average Net Square Feet (NSF) per person is 80 SF while the peers ranged from 109 SF to 257 SF. Average Usable Square Feet (USF) per person is 140 SF while the peers ranged from 195 SF to 747 SF.
3. Mission Hall provides a higher percentage of shared workspace than others within UCSF's peer group. UCSF average is 48% of the work space while the peers ranged from 0% to 61% (includes work space only, not amenities or circulation).



Duke School of Medicine, Trent Semans Center (Source: Duke University)



Stanford School of Medicine Li Ka Shing Center (Source: Stanford University)



UCLA, Teaching and Learning Center for Health Sciences (Source: SOM/UCLA)

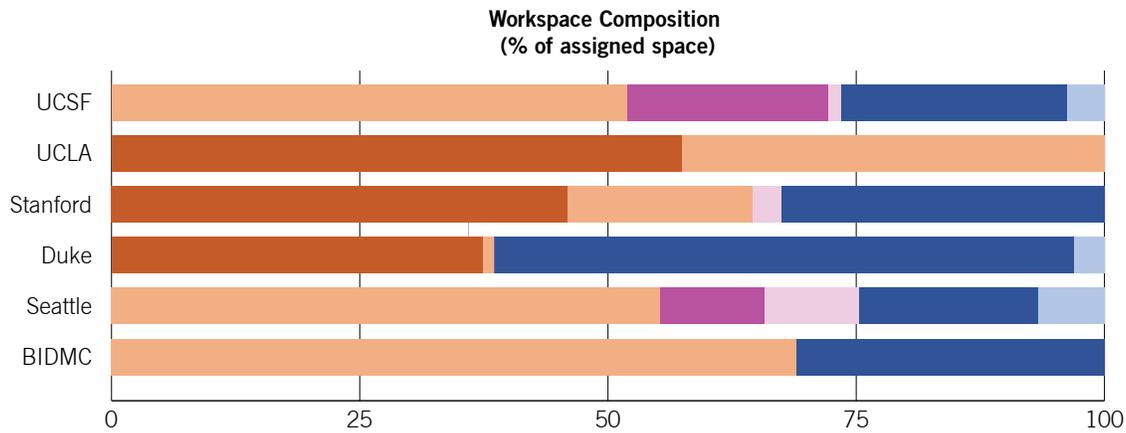


Figure 04 Comparison of space allocation (% of assigned space) for all workspace types.

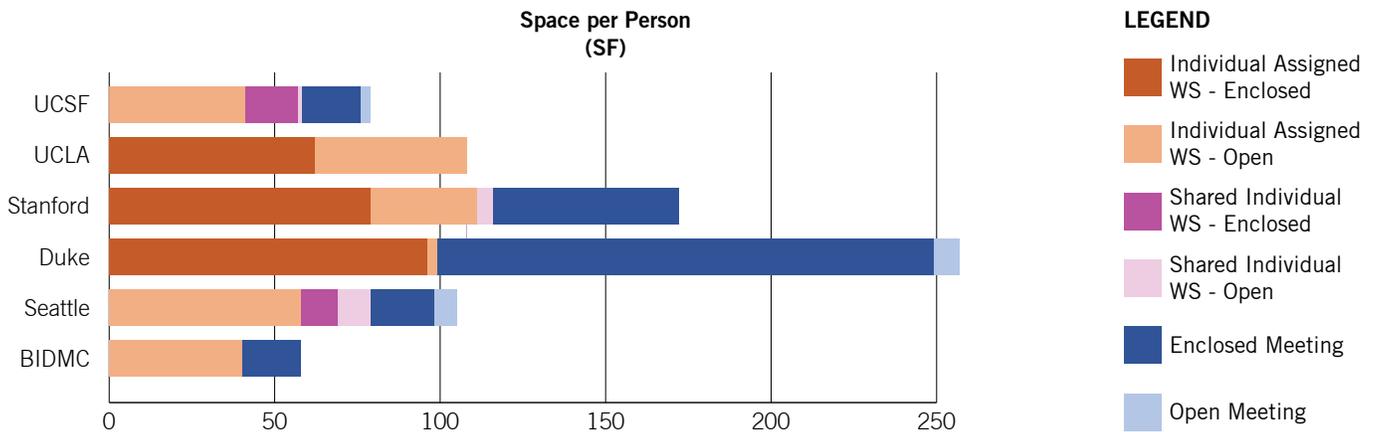


Figure 05 Comparison chart showing the space per person (SF) for all workspace types.

Key takeaways from this comparison:

1. Compared to peers UCSF has a greater percentage of space allocated to open individual assigned workspace and open individual assigned shared workspace.
2. Among the peers, UCSF has the least square footage of workspace per person. UCSF provides 40 SF/ person of individually assigned workspace compared

to other peers in the 100+ SF/person range. Seattle is the most generous in individual workspace per person.

3. The three ABW buildings have similar profiles; the ratio of Individual vs Collaborative is almost identical across the three buildings.
4. Mission Hall's density is between the two other ABW buildings;

ABW COMPARISONS

Beth Israel Deaconess Medical Center & Seattle Children's Hospital

Within the ABW comparative group of Beth Israel Deaconess Medical Center and Seattle Children's Hospital:

- Mission Hall's spatial composition is comparable to the ABW examples, as they have similar proportions of each space type.
- Like Mission Hall, neither of the ABW examples provide private offices.
- Mission Hall provides comparable workspace per person to other institutions in the ABW comparative group. UCSF average NSF per person is 80 SF while the ABW comparatives ranged from 58 SF to 104 SF. Average USF at UCSF is 140 SF while the ABW comparatives ranged from 126 SF to 206 SF.
- Mission Hall provides a higher percentage of shared space than others within the ABW comparative group. UCSF average is 48% while the ABW comparatives ranged from 30% to 45% (includes work space only, not amenities or circulation).
- While there are some differences in composition and total space per person, Mission Hall has more in common with these examples than with examples from UCSF's peer group, suggesting that the ABW principles employed by UCSF are consistent with others who have attempted to use ABW principles.

Across all benchmarked facilities, Mission Hall has a notably larger floor plate, a significantly different scale than other comparable office spaces in the medical education field. See chart in Figure 06.

It is important to note that the peer group comparisons were traditional academic office environments that included some components of alternative workplaces, such as common gathering areas and some Breakout Areas. These were complete building construction projects.

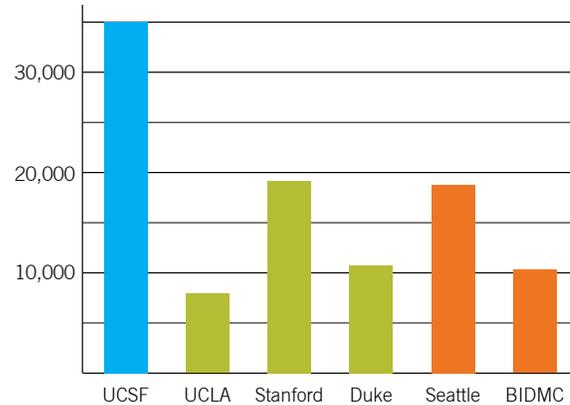


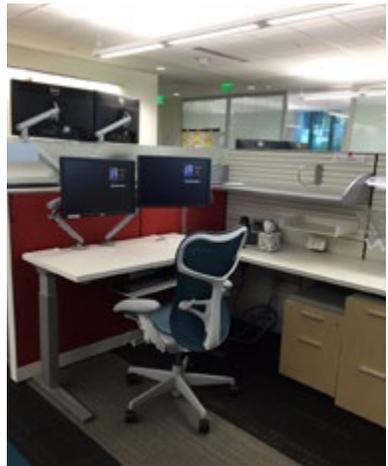
Figure 06 Average floor size (SF) for benchmark comparisons

Key takeaways from this comparison:

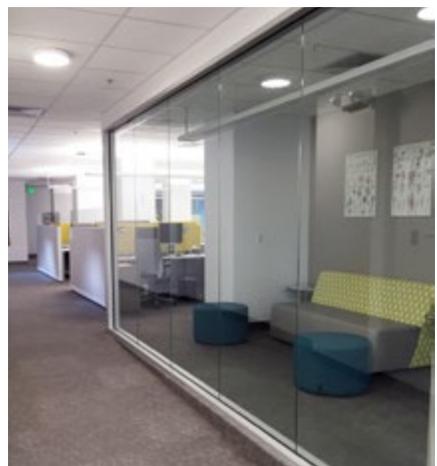
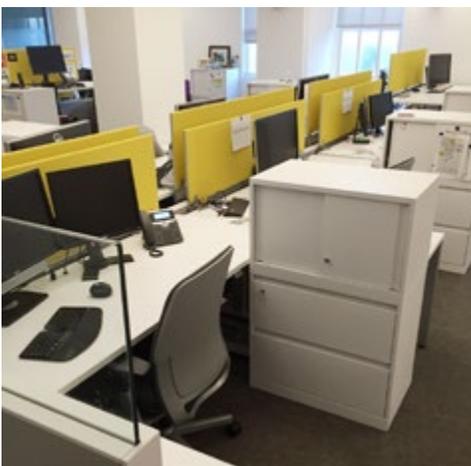
- Create significant occupant leadership engagement in the development of the idea to consider ABW. For Beth Israel and Seattle Children's, the need to identify alternatives to traditional space allocation existed. The team began the process by engaging leadership in the issue and developing alternatives to accommodate growth and budget. In this way, leadership was on board from the initial conversations throughout the process.
- Assume ongoing co-development of the process and the design solution. For both teams, the overall process was one of co-created strategies. These ongoing conversations allowed the team to build consensus and understand how to best adapt the solutions to fit the work needs of the occupants.
- Assume a research-driven process to evaluate effectiveness. Both teams set up an evaluation process, in these cases a Post Occupancy Evaluation, to monitor successes as well as lessons-learned.



ABW at Beth Israel Deaconess Medical Center



ABW at Seattle Children's Hospital



ABW at UC80

Benchmarks, continued...



Figure 07 Analysis of Beth Israel Deaconess Medical Center



Figure 08 Analysis of Seattle Children's Hospital



Figure 09 Analysis of UC80



Figure 10 Analysis of UCSF Mission Hall Floor 4

Benchmarks, continued...

Comparatively, these ABW facilities were pilot projects within an existing facility. These were established as pilots given the relatively new nature of ABW. These pilots were developed, planned and executed differently due to the exploratory nature of the projects.

ADDITIONAL COMPARISONS

A prototype suite at the UC Hall building on the Parnassus Campus and a confidential private sector medical center offered two additional comparisons to alternative workplace strategies.

UC80

UC80 is a small suite that was developed as a prototype in the UC Hall building. It was identified as a successful example of alternative space within the UCSF portfolio. A comparison of this space against Mission Hall provided further insight into criteria contributing to a more successful workplace for UCSF.

- UC80 is a small suite, very similar in scale to the types of departmental suites that are most common across UCSF campuses.
- The overall UC80 space is much smaller than a typical neighborhood at Mission Hall, at a total of approximately 4,600 USF and including approximately 33 individual workstations and offices. Despite the difference in scale, the similarity in space type, function, and user group makes it a relevant comparison.
- The components of the space are similar to those in Mission Hall, including bench-style workstations, small individual Focus Rooms, and small group Huddle Rooms. Like Mission Hall, the space is primarily open, with few enclosed spaces on the perimeter.
- The efficiency of the space is approximately 80 NSF / 140 USF per individual seat, which is approximately equal to Mission Hall.
- Unlike Mission Hall, UC80 includes a limited number of spaces that are fit out as private offices. Offices provided do include typical office furniture that would be appropriate for all-day use.

- Workstation sizes and orientations are consistent with Mission Hall. This refers to size of the workstation and to orientation of one's back to secondary circulation. There is only one instance of an individual with traffic behind his/her back to a shared resource. However, UC80 significantly differs from Mission Hall in that shared spaces are located so as to minimize traffic behind workstations.
- The circulation path in the UC80 space is irregular, with few straight lines and limited sight lines. While this is not typically considered a best practice in planning, based on anecdotal feedback, it doesn't appear to have a negative impact on employee satisfaction in the space.

UC80 provides approximately 15 sf of enclosed meeting space per individual, which is similar to Mission Hall (18 SF/person).

UC80 includes less variety in work settings, and does not include alternative open settings such as breakout areas.

Given the similarities in the spaces, further study is required to understand why this space is viewed positively, while the similar space at Mission Hall has been less successful with employees. It may be that building-level factors, such as location and move logistics, may be impacting users' opinions of the space. It may also be that working in an enclosed suite is more familiar than Mission Hall's larger shared floor plates.

Confidential Example

A private sector medical center provided a confidential example of three ABW settings. Due to the confidential nature of the examples, user feedback on the spaces is limited and floor plans cannot be shared. However, a comparison against Mission Hall is valuable in understanding how other institutions in the medical field are approaching the concept of alternative workplace planning.

- For this institution, there was a need to change the way they allocate space. With their growth, it was not feasible to give every physician an office, so they implemented an alternative strategy for allocating space. Reducing the amount of space for administrative functions frees up more area for clinical space. The first of the areas to undergo this change was the executive team's office. This was an important transformative message as leadership demonstrated their willingness to have less personal space in order to free space for other necessary uses.

- Like the UC80 example, the spaces are enclosed suites that are much smaller than Mission Hall. The spaces are self-sufficient, with dedicated amenities and support space which are not shared with the rest of the building.
- The confidential example provides more space per individual, at approximately 225 USF/individual seat. However, the seats are shared, reducing the SF/person.
- Within the suites, the examples include some similar spaces to Mission Hall, but many of the alternative settings are different. These different spaces include a brainstorm room, media room, video lounge, and a large open collaboration area.
- The brainstorm room is similar to the Breakout Areas in Mission Hall, but it is semi-private with partial walls enclosing the space. It is located in the corner, providing additional privacy above the levels provided by the breakout areas in Mission Hall. Additionally, the name and layout of the room clearly defines its intended purpose and activities.
- The spaces include a work café, which is similar in function and intent to Mission Hall's Town Centers, but on a smaller scale. The space is designed as a place for people to meet, collaborate, and also as a typical pantry. Like Mission Hall, the space is immediately adjacent to an open workstation area.
- Like the UC80 example, the confidential examples include rooms designed as private offices, with typical office furniture suitable for all-day use. The space also includes small focus/phone rooms for individuals.
- These confidential examples co-locate the open collaborative environments together, creating a larger space, in contrast to Mission Hall, where Breakout Areas are often planned as a small open area adjacent to assigned work spaces.
- The examples provide less formal meeting space than Mission Hall, but allocate a variety of alternative meeting spaces and media-equipped room.

Overall, this example from a UCSF peer institution has some similarities to Mission Hall, but it has fewer traditional work spaces and a more generous allocation of square footage. While user feedback was limited, it is still valuable to understand this example's use of alternative settings.

This example is also important in illustrating the need for buy-in from senior leadership. The institution was able to implement these changes initially because its executive team modeled the new way of working.

Interviews / Focus Groups / Survey

The following is a summary of user comments based on feedback from focus groups, interviews and surveys in post occupancy research. Preoccupancy feedback is also included to provide context.

Throughout the data collection process, respondents' comments were logged in a database and categorized by theme and subtheme. To maintain anonymity, the responses were coded and then clustered by topic area. The database was then sorted and analyzed by the team to produce the summary findings that follow.

The topics are grouped according to the overarching assessment categories of the Workplace Research Study: Satisfaction, Well-Being, Work Effectiveness, and Engagement. Within each of these broad categories, the themes and subthemes are presented as subsections, summarizing the user feedback.

Results per topic include the post occupancy responses by Faculty. Where Staff perspectives differ from those of Faculty, the alternative point of view follows. Otherwise Staff concerns/ comments aligned with Faculty.

Survey responses are then reported in aggregate. Faculty responses to survey questions in section 1 on Satisfaction and section 2 on Location, are approximately 1/2 point lower than the aggregate responses. Section 3 responses were more equivalent.

Comparison of Clinical and Non-Clinical Faculty responses showed no significant differences except in locations for work. Clinicians were in the hospital or clinic more as expected.

The Preoccupancy Context sections provide background collected from respondents prior to the move.

Summaries of these findings are included in Chapter 1: Executive Summary.

Satisfaction

Satisfaction refers to respondents degree of personal satisfaction and includes issues reflecting their morale.

Respondents' comments clustered into the following themes:

- Attendance
- Optimism
- Recruitment/Retention
- Respect/Disrespect
- Resistance/Resignation
- Apprehension
- Communications

Each of these are described below:

Attendance

Respondents come to Mission Hall less frequently than they did at their previous locations. Specifically respondents described an overall reduction in personal attendance and colleagues's attendance. This was true for both Research and Clinical Faculty. While these were not quantified against a baseline, the consistency of this response from most respondents and the results of the Time Utilization Study suggest that attendance is lower than desired.

Many respondents work at multiple locations. Most noted that they would use Mission Hall only when convenient, but lacked the time to travel between the hospital and Mission Hall while on rounds or on call. Work at home and work from elsewhere at UCSF were alternative locations mentioned.

Respondents described their need to find environments that better supported their work and only coming to Mission Hall when required to do so.

Staff described the struggle with transportation availability to Mission Bay. However Staff often reported that they did not have the option to work elsewhere. While Staff did not highlight reduced attendance per se, the Time Utilization Study suggests that attendance is lower than desired for Staff as well.



Public seating in lobby at Mission Hall

Survey Results

The survey results reflected that all respondents spend about 6% less time working each week in Mission Hall than they did in their previous workspace locations. However in looking specifically at Faculty, time in the office decreased by 18%.

Following occupancy in Mission Hall, the percentage of time that respondents work in their home office more than doubled.

Overall respondents (n=360) identified the primary causes for the difference as the length of commute (26%) and the lack of closed office (23%). Comparatively 42% of Faculty cited the lack of a closed office as the primary reason for spending less time at Mission Hall. Length of commute (14%) and Mission Hall environment (13%) were the other major contributors (n=135).

This is a clear shift in how all respondents work because the majority (86%; n=462) do not have another assigned workspace elsewhere at UCSF and even if they do, most of them (66%; n=148) don't have an alternative closed office. This is equally true for Faculty who noted that 72% do not have another assigned workspace at UCSF (n=147).

When they are at Mission Hall respondents spend most of their time (63%) working in their own workspace. Faculty comparatively spend about 42% of their time in their own workspace and the remainder largely in Focus, Huddle or Conference Rooms.

Less than 2% of all respondents' time is spent on switching between their workspaces and another location at Mission Hall.

About 60% of all respondents' time is spent doing heads-down work while Faculty spend about 49% of their time in heads-down work.

Faculty spend about 57% of their time on academically-based work and the remainder on administrative work (24%) and clinically-based work (19%) respectively.

Preoccupancy Context

Many Faculty projected that the move to Mission Hall would significantly impact office attendance. This was due to the apparent lack of fit between the work that the Faculty do and the types of environments provided to them at Mission Hall. Some anticipated more Staff working from home, increased sick days, and a general increase in absenteeism because Faculty and Staff would not want to come to the new space. Some also felt that open office environments inherently led to higher absenteeism based on empirical studies and



First floor lobby at Mission Hall

popular press they had reviewed. In interviews with Faculty, many stated that they were already preparing to work more from home or third workplaces.

While there is no baseline data documenting the degree to which occupants used their previous work environments, in the observational studies, many Research Faculty were not present in their offices during the course of the day. This could be either due to the fact that they had moved to Mission Hall in advance, were practicing new ways of work, were working at another location or some combination of these.

When speaking to Research Faculty, they specifically noted their dependency on the privacy of their offices to support their research efforts. The offices provided quiet, controllable space that allowed Faculty to focus on the work required. Faculty also reported that they work from home routinely one or more days a week.

As Clinical Faculty were more focused on their clinical space and the availability of nearby space to write up cases, it was expected that they would be in their offices less.

Prior to occupancy, respondents expressed concern that the lack of a private, quiet space would drive many to work from home more frequently. This tactic is currently employed by some, but respondents mentioned increasing the number of days that they would work from home. Chairs expressed concern about diminished Faculty/Staff cohesion and department engagement with increased work from home.

Clinical Faculty and Research Staff are mobile between multiple UCSF locations as well as other institutions. Similarly, Clinical and Research Faculty and Research Staff mentioned that they sometimes work at

locations other than their primary work site, whether at a coffee shop or at another medical facility. They move between multiple locations within one day and within a week.

Others, such as Research Faculty, may be focused solely at Mission Hall or also may share multiple workspaces. These varieties of Faculty and Staff typologies have notable differences in perceptions of their workspace. The most common alternate work locations were clinical spaces, but many also mentioned teaching and counseling spaces. Some Research Staff indicated a need to work in other offices depending on the location of investigators and administrators. Some saw the move to the new location as an opportunity/reason to work elsewhere more often. Again, this raised the concern of cohesion and engagement.

Respondents had varying estimates on how much time they spend in the office. Estimates varied by individual, even within Staff and Faculty lines as well as within Research and Clinical lines. While most Clinical respondents indicated a high degree of time out of the office, there were some who seemed to spend the majority of their time in the office. Some Staff indicated that most time was spent in the office, but many Staff spend much of their day in other locations, depending on where Faculty and investigators are located. In general, Faculty reported spending less time in the office than in other locations.

Without a baseline of typical use patterns, it was not possible to project expected space use for Mission Hall for either Research or Clinical Faculty. Future studies should establish a baseline time utilization to better understand existing work patterns.

Comparatively, in the preoccupancy, many Staff suggested that they thought attendance might not be affected with the move to Mission Hall if basic transportation issues to Mission Bay could be resolved. They also said that the Mission Hall space was a significant upgrade

over spaces they had been working in, specifically on the Parnassus campus. Since the space was perceived to be better than their current environments, they expected no downturn in attendance.

Optimism

Respondents were generally less optimistic about Mission Hall than they were prior to the move. Most who predicted a misfit between their Mission Hall environment and their work felt that their predictions were well-founded and cited a number of challenges in the new environment.

There were a few who responded more optimistically. These were typically Chairs who had instituted attendance policies and/or were working through a number of customizations to improve the work environment. However, there were some Faculty who also expressed optimism about the new environment as well. They typically referred to the connections between colleagues as the most positive aspect.

Overall respondents remained optimistic about the value of being on campus and near the hospital and clinic.

Staff were less optimistic in general. While many cited positive aspects of the new environment, such as the quality of the Staff work environments, most felt that the "library-quiet" space and the decreased attendance were negative. The expected increase in connections between others had not materialized. In fact, many reported a downgrade in relationships.

Survey Results

When asked whether things would be better or worse in the next year, Faculty noted that they expect things to be about the same ($\mu = -0.30$ on a -3 to +3 scale; $n = 159$).

Preoccupancy Context

Some felt that while the change would be difficult at first, they expected people to adapt over time. A few reported genuine excitement for the new space and workplace features. Of those expressing optimistic opinions, most were Chairs with fewer Faculty indicating optimism towards the new space. When Faculty did express optimism it was related to the ability to connect with their colleagues, the research amenities and community on the Mission Bay campus with its current focus on "pure science."

Faculty expressed optimism about the new space though this was accompanied by anxiety and frustration. Faculty frequently relayed feelings of frustration about being forced into the Mission Hall environment and confusion and hurt about why the UCSF handled the approach as it had.

Comparatively, prior to occupancy, Staff were generally optimistic about the move. Staff also predicted positive outcomes from the space in terms of the ability to connect with other departments more easily and frequently, which could lead to a better sense of community and a positive change in how information is shared and research is conducted. Staff who occupied interior spaces with limited daylight in their previous facilities expressed a positive outlook about the new facilities. Staff workstations as well as the overall Mission Hall facility would be an improvement over their current conditions.

Retention/Recruitment

Respondents frequently suggested that recruitment and retention would suffer as a result of the new environment. Faculty noted that this response was from both senior Faculty as well as more junior Faculty who were surprised to see this type of environment in the SoM. Some indicated that they had difficulty recruiting. For example, one recruit had to be promised an alternative work environment at the hospital in order to agree to join the UCSF team. Faculty specifically asked that the SoM begin to track recruiting comments related to the new building.

Staff spoke of the commute impact on their ability to remain with UCSF and/or the impact on recruiting others. However they also raised concerns about recruitment of Faculty to work in this environment.

Preoccupancy Context

One major concern expressed specifically by Faculty, was how this new workspace would be compared against competitor institutions when trying to attract the best and the brightest Faculty. They felt that their competition would offer private offices appropriate to the status that recruits expected. They didn't feel that Mission Hall would be a compelling option.

Some respondents indicated that they were considering leaving for another job or early retirement as a result of the move. This tied to their feelings of disrespect but also to their perceptions that they could not do their work in this new environment. Some also said that they have started to lose their Staff. Speculatively, these changes may have as much to do with the location in Mission Bay and the increased commute for many as with the Mission Hall building. Though the general outlook was pessimistic, a minority suggested that the impact would not be so great and could be overcome.

Multiple respondents stated concern that losing a private office would be perceived as a personal demotion and could potentially result in less success in securing funding. Respondents identified grant reviews during which availability of office space was considered as part of the overall grant evaluation. These respondents were trying to determine

how to package an alternative approach to grants so that they would not lose opportunities due to the lack of space to do heads-down and focused work.

With ongoing discussions about competition for recruits and attrition risks, Faculty were concerned that Mission Hall would negatively impact the SoM. Given the status of the University of California School of Medicine, retention and recruitment would not likely be driven by the work environment, but the work environment could be a deciding factor if other offers are equal. As mentioned previously, several stories regarding recent recruits suggested that the work environment was an issue in the negotiation.

Comparatively, in the preoccupancy, many Staff mentioned the impact on their commutes as a challenge to their personal lives which in turn may negatively impact their ability to remain at UCSF.

Respect/Disrespect

Respondents were specifically asked to comment on the level of respect and concern that the university has for them. While many respondents expressed a sense of pride at working at a high caliber research institution, many felt that they had been disrespected by the way the new facility was planned. Examples include the disrespect of losing an office, of not being involved in the planning, of losing hierarchy between roles as all now have the same space type, of securing significant grant monies and then being treated so poorly and similar commentary. Faculty clearly felt a lack of respect for what they do for the School and the University at large.

By comparison, Staff noted the impact on their work in terms of new costs to bear for parking or commuting. They also expressed concern about the loss of hierarchy in the work setting, specifically mentioning that it didn't seem right to have a Department Chair sitting in a cubicle. The context was that Chairs are 'go to' leadership who need to have the ability to have a private conversation with an employee as well as to convey gravitas during meetings with recruits.

Survey Results

The survey results indicated that 44% of total participants feel that their current workplace at Mission Hall worsened their desire to stay at UCSF. While almost the equivalent percentage feel that their desire to stay hasn't changed, less than 12% noted that the feeling has improved after their occupancy in Mission Hall ($\mu=-0.64$ on a -3 to +3 scale; $n=504$).

Less of 4% of Faculty responses indicated the feeling has improved since the move ($\mu=-1.27$ on a -3 to +3 scale; $n=164$).

In terms of feeling valued by UCSF, 53% of all participants feel less so since the move while 35% feel about the same ($\mu=-0.98$ on a -3 to +3 scale; $n=505$). For Faculty, about 81% feel less so after their Mission Hall occupancy ($\mu=-1.88$ on a -3 to +3 scale; $n=164$).

Responses varied on the likelihood of recommending UCSF as a great place to work. About 38% of all responses indicated negative responses, while 34% and 28% expressed neutral and positive responses, respectively ($\mu=-0.20$ on a -3 to +3 scale; $n=506$). 66% of Faculty participants noted negative responses, only 10% of them with positive responses ($\mu=-1.09$ on a -3 to +3 scale; $n=163$).

Preoccupancy Context

Some felt as if the administration was trying to deceive them about the benefits of the space. They referenced recent press and empirical studies about the challenges of open work environments and compared those to the message that the university provided. They noted that they were not like the technology companies around the Bay Area and felt that there was both a misunderstanding of the work that they need to do as well as a lack of concern about that misunderstanding.

Many indicated that their lack of a private office was a sign of disrespect, citing the importance of an office as a status symbol. Others expressed the need for a private office as a place to deal with highly sensitive issues and decompress in times of significant stress related to patient outcomes. Some plainly stated that they felt that the administration did not care about them.

Many felt that they were subjects of a real estate experiment as they knew of no other major research Universities that had undertaken similar initiatives.

Feelings of disrespect were most common among Faculty, but were also mentioned by some Chairs. The sentiment was common to both Clinical and Research respondents.

Resistance/Resignation

Many Faculty identified ways in which their work processes were not supported in Mission Hall. Examples included the inability to focus on grant writing as well as technology limitations that frequently delay meetings and/or make them impossible to do. Respondents expressed resignation to the situation and described how they work elsewhere in order to compensate for the challenges at Mission Hall. These comments were reinforced by the time utilization studies conducted in the Spring and Fall of 2015 wherein average occupancy at Mission Hall was between 30-34%.

Preoccupancy Context

There were a number of negative comments expressing general unhappiness. Some questioned whether the new space had any benefits at all. Others suggested that they would not come to work in the new space.

The reasons for the resistance were numerous, including lack of perceived functionality, inconvenience related to the location, inability to work as they used to, and a feeling of having been insulted by the University due to a lack of engagement throughout the process.

Faculty reflected a sense of resignation that there is little they could do to impact the future look, feel or performance of the Mission Hall workplace. A number of Faculty voiced the opinion that there high performing individuals and would stay that way regardless of any negative consequences that Mission Hall might create for their productivity.

Apprehension

This feeling of resignation was voiced far less frequently than feelings of apprehension. Apprehension was expressed by Faculty in a majority of the interviews and focus groups.

Respondents frequently spoke of how their early apprehensions were manifested in the environment. While there were some respondents who were positive about Mission Hall, the majority reflected on their previous apprehensions and referred to things turning out 'as expected.'

Staff responses were less negative than Faculty. This is likely due to the improved working conditions for Staff.

Survey Results

In the survey results, about half of the respondents (53%) reflected that looking back, the experience of occupying Mission Hall was worse than they anticipated. About 25% of the respondents indicated that the experience was better than they expected ($\mu=-0.68$ on a -3 to +3 scale ; $n=493$). Looking forward, the majority of respondents (59%) imagine that things will stay the same ($\mu=-0.06$ on a -3 to +3 scale; $n=493$).

Preoccupancy Context

Apprehensive comments ranged from fear of the unknown, to concern about what was seen on tours/walkthroughs, to anxiety about the adjustment period once moved. Some of the apprehension came from what had been heard from those who have already occupied the building.

Comparatively, in the preoccupancy discussions, while some Staff echoed Faculty perspectives, the majority were less apprehensive about the new environment.

Communications

Respondents expressed dissatisfaction with the overall Mission Hall communications. Many were not aware of the efforts made by the SoM to create website updates and those that were aware reported not having time to go and look at various websites for information. Responses suggested that a more multimodal approach to communication would be necessary for future communications as well as for future projects.

Survey Results

In the survey results, negative responses were mainly noted on individual and collaborative work effectiveness in Mission Hall. Overall, the negative feelings toward individual work effectiveness were greater than group work effectiveness. The majority of all respondents (77%) expressed that their personal workspace in Mission Hall interferes with individual work effectiveness, with 11% indicating positive impacts ($\mu=-1.32$ on a -3 to +3 scale; $n=494$). About half of total participants (48%) responded that personal workspace in Mission Hall interferes with the ability to work effectively with others, with 24% noting that the group work effectiveness stayed the same and 28% indicating that it has enhanced following their occupancy of Mission Hall ($\mu=-0.55$ on a -3 to +3 scale; $n=493$).

Negative feelings were more prominent in Faculty responses. About 89% noted that their personal workspace in Mission Hall interferes with individual work effectiveness, with only 3% indicating positive responses ($\mu=-1.94$ on a -3 to +3 scale; $n=160$). More than half of Faculty participants (57%) expressed that their personal workspace interferes with the ability to work effectively with others, while the remaining responses were split evenly between neutral and positive ($\mu=-0.93$ on a -3 to +3 scale; $n=161$).

Preoccupancy Context

In the preoccupancy discussions, much of the Faculty uneasiness appeared due to the unevenness of how information had been shared prior to the Mission Hall move and how different groups with highly technical requirements would adapt to an activity based workplace. Some were also unsure as to when they were moving, or if they were moving, into Mission Hall. This information gap appeared to have exacerbated the basic concerns and as of early January, continued to be expressed.



Satisfaction

SUMMARY

- Lower attendance
- Decreased optimism
- Concerned about recruitment/retention
- Decreased respect/increased disrespect
- Resigned to the situation
- Limited change communications



Well-Being refers to participants comfort between themselves and their physical and organizational environment.

Keeping in mind the earlier references to the different workplace typologies, interpretations on the work environments vary. The key issues identified fall into the following categories.

- Control
- Facility Conditions / Building Maintenance
- Facility Location
- Access to Clinic or Hospital
- Neighborhood Character
- Spatial Quality
- Spatial Organization
- Space Efficiency
- Shared Offices
- Furniture / Ergonomics
- Lighting
- Views
- Public Space
- Amenities
- Transportation
- Campus Connectivity
- Culture
- Generations and Perception
- Group Identity
- Preferred Adjacencies
- Wayfinding

Each of these is described in the following section.

Control

Respondents expressed the desire to have some level of control over the physical environment. They felt challenged if they tried to personalize the environment but lacked guidance on what was and was not acceptable to the University. Similarly, they felt that they had no control over the noise in the open office or the ability to conduct private conversations. They specifically cited the lack of sound separation between the Focus Rooms and the Open Office area as a drawback to finding privacy.

Comparatively, Staff expressed similar concerns. However they felt that they were being controlled by the Faculty, noting admonishments received from Faculty when speaking to others in the open office. These admonishments were intended to quieten the noise, but the unintended consequence is that Staff now have no control over their conversations with colleagues with whom they previously collaborated.

On top of these, Faculty were not properly trained to adjust their vents in their workspaces and so some were unaware of the choices that they could make to improve thermal comfort.

Survey Results

Approximately 74% of all respondents noted that they were unaware of how to manage building heating/cooling/lighting outside of operating hours ($\mu=-1.50$ on a -3 to +3 scale; $n=516$). However, the majority are able to control their floor vents (64%), desk/task light (79%) and window blinds (48%) although most noted that the vents do nothing to ameliorate their temperature issues.

Similarly, about 81% of Faculty responses indicated that they were unaware of how to manage building heating/cooling/lighting outside of operating hours ($\mu=-1.85$ on a -3 to +3 scale; $n=165$).

Preoccupancy Context

Control encompassed a number of issues including personalization of individual workspaces, group personalization and having input about move decisions. In a variety of interviews with Faculty this also related to the issues such as temperature controls, privacy, noise, and concerns about individual wellness related to working in an open office. Faculty iterated that they believe that they have no control of these variables.



Town Center at Mission Hall

Facility Condition / Building Maintenance

Respondents raised concerns about poor building maintenance, the lack of awareness of how to manage thermal controls and a series of technical mishaps related to technologies and Town Center equipment.

Building Maintenance was initially identified as an issue when Faculty were asked to take out their own trash and to not leave trash in the Conference Rooms, instead finding a trash can elsewhere. This was coupled with poor building maintenance in the restrooms wherein supplies ran short and general cleaning was not as frequent as needed, and in the Town Centers where pantry equipment and refrigerators were not properly cleaned. Faculty expressed dismay about these shortcomings and the amount of time that was taken from the work of the SoM to try to address these.

The microwaves, refrigerators and pantry water coolers began to fail frequently after occupancy. Microwaves were subsequently replaced, but the replacements were apparently inferior quality and subsequently failed again. Refrigerators were malfunctioning and were undersized for the population being served, particularly given the limited food choices nearby which

drove the need for occupants to bring their own lunches. Water coolers were not attached to drain lines and so overflows were leaking onto the floor, creating a slip hazard as well as a general mess for others. Waste was not properly handled in terms of frequency of pick up and in terms of occupants having to empty their own trash. Lack of waste containers in Conference Rooms led those users to drop waste in the nearest workstation waste bin. Respondents reported that rodents had been sighted.

Of those who are dissatisfied, 51% responded that they sometimes have significant problems, with 32% noting that substantial issues are frequently to always occurring. Responses included lack of cleanliness in the shared common spaces in Mission Hall, including Focus Rooms, Huddle Rooms and Town Center.

Opinions on general maintenance of the building, and trash and recycling program varied. In open responses, the issues related to the frequency of cleaning, the provision of cleaning supplies, and the management of waste in the building.

Survey Results

In the survey results, 44% of all respondents expressed dissatisfaction with cleaning service provided for their workspace at Mission Hall while 36% indicated satisfaction ($\mu=-0.13$ on a -3 to +3 scale; $n=453$). Comparatively 26% noted dissatisfaction with general building maintenance ($\mu=0.36$ on a -3 to +3 scale; $n=453$) and 26% indicated dissatisfaction with the trash and recycling program ($\mu=0.55$ on a -3 to +3 scale; $n=455$).

About 45% of Faculty participants indicated dissatisfaction with cleaning service provided for their Mission Hall workspace, and the remaining responses were evenly distributed between neutral and positive ($\mu=-0.41$ on a -3 to +3 scale; $n=143$). In regards to satisfaction with general building maintenance, almost equivalent number of Faculty responses expressed neutral or positive stance (38% and 36% respectively), with 26% indicating dissatisfaction ($\mu=0.17$ on a -3 to +3 scale; $n=143$). 39% of Faculty respondents felt positive toward trash and recycling program, with 26% feeling neutral and 35% dissatisfied ($\mu=0.01$ on a -3 to +3 scale; $n=143$).

Comparatively, CBE benchmark indicated the mean for occupant satisfaction with general cleanliness and maintenance of the building were 1.11 and 1.10 on a -3 to +3 scale respectively ($n=714$).

Preoccupancy Context

For some Faculty, the condition of their previous facility was not ideal. Poor cleaning practices, aging infrastructure and limited thermal control contributed to this perception. In that context the idea of a new work environment at Mission Hall was positive.

Respondents also noted a number of functional challenges in their previous facilities. These include using offices as an exam room, not having enough space on patient care days, not having a designated waiting area for visitors, and not having enough space for growth. This was felt mainly by Clinical Faculty in departments that had expanded without adding space so that ad hoc solutions had to be implemented. As a result Clinical Faculty looked forward to the new clinic and hospital at Mission Bay.

Staff expressed optimism about the improved facility conditions at Mission Bay as well as the proximity to the hospital and clinic. Following occupancy they too expressed similar challenges with facility conditions.

Facility Location

Respondents spoke positively about the connection to the new campus and the overall campus life opportunities. They also spoke positively of the better weather in Mission Bay as compared to Parnassus.

Negative feedback centered on increased commute time, separation from other campus locations and the commute impact on a workday, or the loss of connectivity to those other campus activities. Public transportation and shuttle service are still too limited to overcome the distance/time impact. Also technologies were not set up to offer digital connectivity instead.

Similarly, Faculty expressed concern about the lack of amenities nearby. Limited food and retail choices were most frequently raised.

While UCSF has instituted a short-term food truck program, requested improved shuttle service and worked toward the commitments for a cafe service provider and a retail tenant, most Faculty were unaware of progress being made, which in turn goes back to the earlier comments on communication.

It is questionable whether facility improvements will increase attendance at Mission Hall if in fact the commute to Mission Bay is central to Faculty and Staff dissatisfaction.

Survey Results

Survey results indicated that of total responses there are more respondents (44%) who are dissatisfied with transportation options nearby Mission Hall than those who are satisfied (36%; $\mu=-0.26$ on a -3 to +3 scale; $n=453$). This suggests that transportation alternatives from and to Mission Hall impact the respondents, as the length of commute (26%; $n=360$) was identified as one of the primary factors contributing to the shift in the amount of time spent in Mission Hall compared to the time spent in previous locations.

Faculty responses were similar ($\mu=-0.28$ on a -3 to +3 scale; $n=141$).

Preoccupancy Context

In preoccupancy responses, many respondents had comments about the building location. Many were negative, but some highlighted benefits of the site in Mission Bay. Of the negative comments, most focused on the separation from other campus locations and increased difficulty and time required in getting to their work site. On the positive

Interviews / Focus Groups / Survey – Well-Being, continued...

side, some Faculty commented on being able to be better connected to campus events, such as lectures, as well as other amenities. They described it as a welcome return to campus life.

Access to Clinic or Hospital

Respondents noted that on Clinic Days, the Clinical Faculty would simply find places to work in the hospital or clinic. The walk time between the facilities is too great to work with their workflow. For example, an anesthesiologist may have a short break between procedures, but also must be on call and quickly available as needed. In this example, the break has to happen in the hospital, not at Mission Hall. In previous facilities where offices were located in the same building, it was possible, to some extent, to go back and forth between clinical work and administrative work. At Mission Bay it is not. Instead the days must be segmented to what has to be done in the clinics or hospital and what could be done at Mission Hall.

As the hospital was not designed to support these work flows for the Faculty, they find themselves scrambling to find a space to do their write-ups. This is a compounding frustration as the workspace across the street is too far away and the hospital has limited space to offer.

Preoccupancy Context

In preoccupancy responses, many Clinical respondents indicated that one of the things that worked well about their previous workspace was the close proximity to the clinics or hospital. Often these were in the same building.

There was some concern about the separation of the clinics and hospital from the new office space at Mission Bay. Some respondents noted that the time required to move between either the clinic or the hospital and Mission Hall would discourage use of the space at Mission Hall.

Neighborhood Character

Respondents raised safety concerns in terms of the parking areas, neighborhood walks and the access to the Mission Hall facility. They also raised concerns about the Warriors facility and the impact it would have on emergency access to the hospital.

Survey Results

In the survey results, the majority of total respondents (60%) expressed dissatisfaction with amenities nearby Mission Hall, with 22% indicating satisfaction ($\mu=-0.80$ on a -3 to +3 scale; $n=454$). Faculty responses were similar ($\mu=-0.91$ on a -3 to +3 scale; $n=141$). This reiterates the post occupancy concerns with the amenities offered in the Mission Bay neighborhood.



Mission Bay campus view

Preoccupancy Context

In preoccupancy responses, many respondents commented on the character of the neighborhood in Mission Bay. Some indicated safety concerns due to the limited occupancy of the campus. Opinions varied on the experience of the neighborhood, with some suggesting that the area lacked character and others expressing their affinity for the neighborhood.

All recognized that Mission Bay is in the process of transformation and both welcomed that transformation in terms of the amenities that would be offered and worried about it in terms of increased traffic, particularly from the nearby Warriors site.

Spatial Quality

Respondents felt that Mission Hall offered improved spatial quality with better daylighting, views, and improved outdoor environments such as the common picnic table at the main entry. Others however expressed disappointment at the sterile nature of the new space and the density of the workstations. They specifically called out the 'call center-like atmosphere' on numerous occasions or the 'IKEA furniture' that was chosen. Breakout Areas and Focus Rooms were highlighted as uncomfortable.

Survey Results

In the survey results, the majority of total respondents (66%) indicated that they are dissatisfied with their personal workspace while 26% expressed satisfaction ($\mu = -0.91$ on a -3 to +3 scale; $n = 493$). In open responses, many voiced general dissatisfaction with the overall design and quality of individual workspace.

Faculty responses were predominately negative, with 86% indicating dissatisfaction with individual workspace ($\mu = -1.74$ on a -3 to +3 scale; $n = 161$).

Comparatively, the average score from CBE benchmark was 1.08 on a -3 to +3 scale ($n = 714$).

Preoccupancy Context

In preoccupancy responses, most focus group respondents felt that their previous locations were of poorer quality due to the age and condition of the buildings, the lack of access to natural light and views and/or the spatial organization of the space. Their previous locations lacked parity between Faculty and Staff. In fact, due to the requirements of densification in buildings on the Parnassus campus many Staff members were located in sub-optimal spaces when storage areas were converted into open office space.

Some Faculty thought that the new building would be better quality than their previous locations due to overall architectural design, the opportunity for access to natural light and views, and the cleanliness and the materials.

Conversely, some respondents thought that the new building would be poorer quality due to the close proximity of others in the open environment, the materials used in construction and the sterile finishes.

Comparatively, in preoccupancy responses, Staff expressed optimism about the new building, noting their previous locations were not optimal.

Spatial Organization

Respondents described specific problems with the spatial organization. Among these were the routes to the restrooms through the pantries, the zoning of larger group meeting spaces adjacent to heads-down work spaces along with a lack of proper sound separation and pre function space, the lack of separation of the Town Center from the heads-down workspace and the spatial relationship between workstations and Focus Rooms/Huddle Rooms.

The routes through the pantry to the restroom create a bottleneck that disturbs/engages those heading to the restroom with those trying to get a beverage at the pantry (Figure 12).

The zoning of spaces couples the assembly of groups for larger meetings near heads-down work zones. The inevitable pre and post meeting conversations that respondents have then disturb those working nearby (Figure 11).

The copy room is similarly embedded amongst heads-down work areas. Accessing the copy room from the north requires walking through clusters of workstations instead of easily accessing from a main circulation route (Figure 13).

The building also lacks spaces to engage visitors in the Lobby and elsewhere on the ground floor without escorting them into the back-of-house office space. This is a shortcoming that directly impacts those who invite research subjects to participate in studies at Mission Hall.

Similarly, the Town Center lacks separation between its convivial community atmosphere and the heads-down work environment nearby. This discourages the community activities that the programmed space was to instill and interrupts the heads-down activities that comprise the work of the SoM (Figure 14).



Figure 11 Diagram of typical floor circulation and sound zoning at Mission Hall

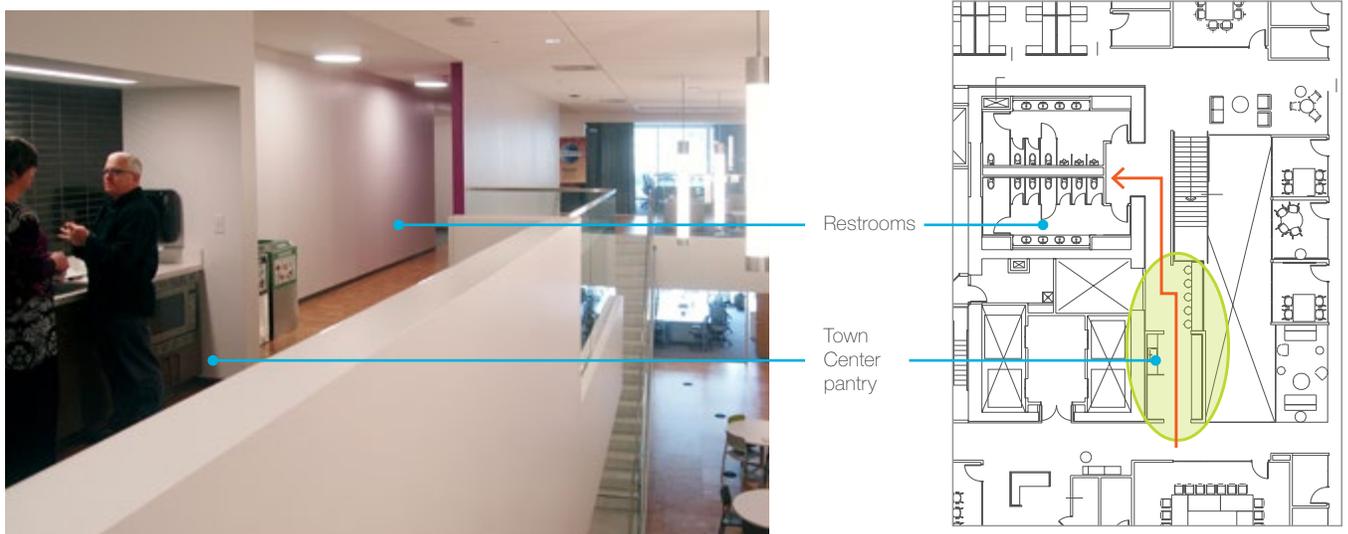


Figure 12 Town Center pantry/restroom route at Mission Hall

Interviews / Focus Groups / Survey – Well-Being, continued...

Finally, the relationship between the workstations and the Focus Room or Huddle Room located facing the occupant's back is an ongoing challenge. Those in the workstations lack privacy and the most basic sense of control as many pass behind them on a daily basis trying to access these other rooms. Given that the sound separation of these rooms is not yet what it should be, the occupant of the workstation just outside the room both sees and hears all that is happening therein (Figure 15 and Figure 16).

Survey Results

In the survey results, the majority (78%) of all respondents (n=116) identified overall configuration and traffic bottlenecks as key factors contributing to dissatisfaction with the Town Center area. In open responses, the two-floor approach was also criticized, with respondents indicating that people do not leave their assigned floor to use the connecting area, and that the

space should be more evenly distributed. The location was also mentioned as a problem, as both too far away for some, too close to workstations for others, and too close to the restrooms.

76% of Faculty indicated that the general office layout interferes to some degree with their ability to get their work done ($\mu=-1.57$ on -3 to +3 scale; n=145).

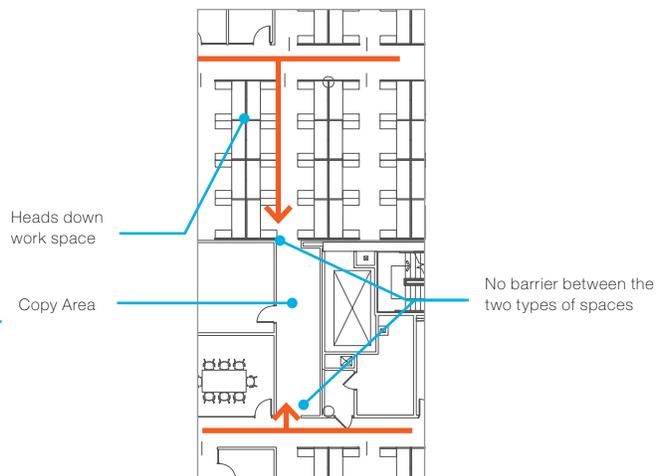
Preoccupancy Context

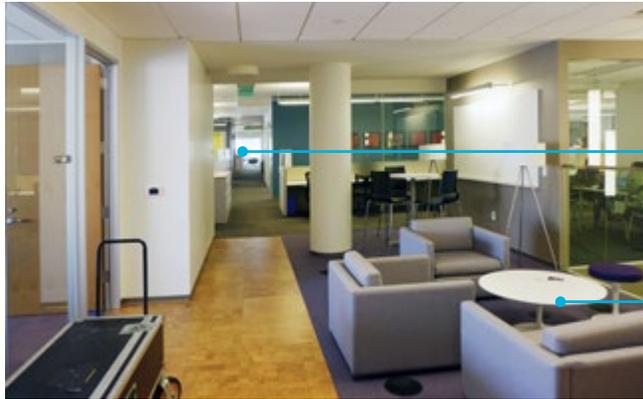
In preoccupancy responses, some focus group respondents felt that their previous work environments were poorly organized due to unclear reception areas, confusing overall layouts, the lack of communal gathering spaces and insufficient means of accessing critical equipment for use with patients.

Some foresaw challenges in the spatial organization in the new building due to the density of the open office layout, the lack of private offices, and the perceived lack of sufficient numbers of Focus Rooms and small Conference Rooms. For many it was unclear how Focus Rooms and Huddle Rooms would fulfill specific technical needs, such as working directly with patients or using specialty equipment.



Figure 13 Copy Center path at Mission Hall





Heads down work space

Town Center + Breakout Area designed to encourage interaction

No barrier between the Town Center and heads-down workspaces

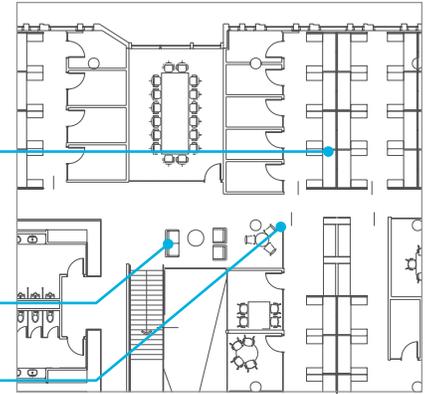


Figure 14 Town Center and Breakout Area adjacent to workspaces



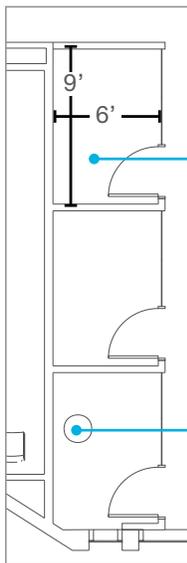
Figure 15 Huddle Room directly behind workstation

Focus Rooms

Heads-down Workspace



Figure 16 Diagram of proximity of Focus Rooms to workstations



The dimensions of some Focus Rooms are not conducive to more than one person working, or to at one time, or to accommodating face-to-face conversations.

Some Focus Rooms contain columns which further reduce the amount of habitable space

Figure 17 Focus Room diagram

Space Efficiency

Respondents challenged the proportion of Focus Rooms and Huddle Rooms to workspaces. Many noted that these rooms were rarely used and therefore, could have offered small offices for Faculty comparatively.

Respondents cited similar reasons for low use of these spaces including the lack of technology required for work [either personal or in the Focus Room], the poor acoustic control [conversations in the Focus Room are audible outside], uncomfortable furniture and poor ergonomics as well as poor lighting. Respondents describe the scale of the room as also problematic, noting that one could not position oneself far enough from the other person for a comfortable conversation. Respondents noted that they 'felt they were on top of one another' when in the rooms (Figure 17).

Similarly the value of the Breakout Areas were questioned. None of the respondents used the spaces as they felt that their intention was unclear and that any use that generated noise, such as conducting a small meeting, would be disruptive to those immediately adjacent. In fact, some departments posted signs suggesting that only quiet activities take place in those spaces.

No one suggested that there could be greater efficiency of the workstations, although some suggested that workstations could have been larger. This was a minority opinion as the majority of responses suggested that the workstations were sufficiently sized.

Time utilization results support these points of view. For example, the average percent of time occupied for Focus Rooms was 6% and Huddle Rooms was 13-17%. See Time Utilization description for further details.

Survey Results

Survey results showed that suitability of equipment and furnishing was a major factor contributing to dissatisfaction with the Focus Rooms and Huddle Rooms. The time it takes to find and move to an available space, poor room lighting, lack of temperature control, and lack of personal laptop and phone technology to take advantage of those spaces were also highlighted as contributing factors to dissatisfaction. Some

noted their negative reactions to the small size and overall feeling of the Focus Rooms, with many describing the space as "claustrophobic" and "depressing."

For Huddle Rooms, availability (39%; n=108) was also identified as a problem. Given the post occupancy feedback that these spaces were underutilized, this was surprising. This result suggests that while overall room availability is high, choices for specific Huddle Rooms may be more limited.

Most respondents (56%; n=102) also indicated dissatisfaction with the lack of acoustic privacy in the Breakout Areas. Many noted that using these spaces disturbs people sitting in nearby workstations. The use of Breakout Areas is actively discouraged by people sitting nearby.

Preoccupancy Context

In the preoccupancy, respondents rarely expressed satisfaction with the efficiency of their previously occupied spaces. Given the density of those spaces, the compactness of the space and the limited varieties of spaces available to them, this was not surprising.

However, respondents, especially Clinical Faculty, identified spatial layouts in their previous facilities that functioned well for their particular group, such as suites or offices with doors, as well as layouts that did not function well, such as shared offices. While not efficient, these served a function.

From a design perspective however, the team noted excessive duplicative circulation and loss of efficiency with limited, if any, modular planning in the previous facilities.

On the other hand respondents, especially Clinical and Research Chairs, perceived that the workspace in the new building would not use space efficiently. Some respondents expressed dissatisfaction with the quantity of space allocated to Huddle Rooms and other Conference Rooms. They felt that these would be under utilized and noted that these could be converted into office spaces. In early Fall 2014 site observations at Mission Hall, it appeared that some of these spaces were already being used as personal workspaces.

Given that most respondents were relocating from environments where spaces were fundamentally different, this was not a surprising finding. It is understandable that respondents relocating from those densely packed environments to the more open environment of Mission Hall and its many varieties of spaces would question the need for those varieties. Many respondents felt no need for their provision. Moreover, they felt that they lost something of value, their office, in a trade for something of limited value.

Shared Offices

Respondents noted that they cannot complete their work effectively in the open environment. While they are no longer sharing an office, they feel that they cannot control the sounds and visual impacts of others which is more disruptive than the shared office environment.

While some Focus Rooms and Huddle Rooms have clearly been appropriated for individual or group use, the low utilization of both underscores that they are not serving the majority of occupants.

Preoccupancy Context

In some of the previous locations, Faculty shared offices with one another. This was due to the limited office capacity in their designated facility.

In the preoccupancy responses, Faculty expressed a variety of views on the use of shared offices. Some respondents who shared an office did not find it to be an appropriate solution for the type of work they do. Some indicated that they avoided using the office when the other

occupant was there. Others said that sharing an office on a part-time basis was not a problem for them. They also mentioned that they might need more common spaces if they were using a shared office as opposed to a private office.

These challenges to space sharing among 2-3 people were further exacerbated when Faculty described their perceptions of sharing environments at Mission Hall. They challenged whether they could complete their required work within the open environments and projected that Faculty would begin to dominate the use of Focus Rooms to compensate for the lack of a private office.

Furniture / Ergonomics

Respondents described how uncomfortable some of the Mission Hall furniture is. Repeatedly respondents raised the Focus Room furniture as a problem. They noted that the Focus Rooms are used for privacy for conversations, phone calls, etc., but much of this work takes time and so extended use of the chairs/tables in the Focus Rooms is not only uncomfortable, to



Shared open touchdown stations in Mission Hall

some it is downright painful. The furniture selection appears to have been focused on short-term occupancy, which is in fact the reverse of the way that the occupants use the space.

Similarly, occupants have requested sit-to-stand desks throughout the facility. Hundreds of workstation tops were replaced to provide sit-to-stand options. These in turn provide better ergonomic and active choices for their users, but decrease the sense of privacy between those workstations and adjoining workstations as one person stands over another.

Finally, Faculty reported the Ergonomist program typically available at UCSF did not support Mission Hall and questioned why that was the case.

Survey Results

Survey respondents who are dissatisfied with the Focus Rooms (57%; n=152) mention unsuitable furnishings as a major problem.

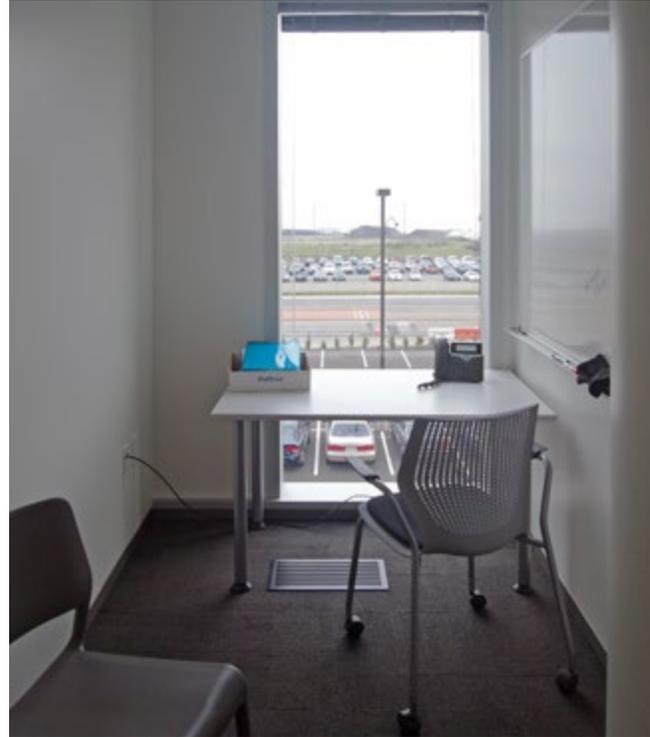
Furnishings (47%; n=108) were also mentioned as one of key factors contributing to dissatisfaction with the Huddle Rooms.

Survey responses varied on satisfaction with individual workspace furnishings. While 45% of respondents indicated that they are satisfied, 33% are dissatisfied to some degree ($\mu=0.21$ on a -3 to +3 scale; n=457). For those who are dissatisfied, the lack of adequate storage (70%) and lack of space (66%) were identified as primary issues (n=151). 41% mentioned comfort as a problem, with 36% expressing dissatisfaction with adjustability. Other comments included the ongoing desire for sit-stand desks.

While 46% of all respondents indicated that the furnishings in individual workspaces do not affect their ability to do their job, 32% of respondents indicated that furnishings interfere with their ability to work ($\mu=-0.20$ on a -3 to +3 scale; n=456).

Regarding their ability to adjust the workspace to suit personal preferences and needs, majority of Faculty responses (86%) were negative ($\mu=-2.04$ on a -3 to +3 scale; n=169).

Comparatively, CBE benchmark indicated the mean value of 1.18 and 0.95 (on a -3 to +3 scale) for occupant satisfaction with the comfort of their office furnishings and with the adjustability to meet their needs respectively (n=714).



Focus Room furniture at Mission Hall



Ad hoc storage solutions at Mission Hall

Preoccupancy Context

In the preoccupancy responses, Faculty said that they were looking forward to improved furniture solutions such as sit-to-stand desks and ergonomic chairs at Mission Hall.

Ergonomics remained an important question. Many respondents asked about ergonomics training and whether support services would be available to assure that adjustments were appropriate. Others asked about how ergonomics were to be managed when individuals moved from location to location over the course of the day. For example, some noted that they have had ergonomic consultations in order to improve their physical well-being at work. These consultations have resulted in changes in furniture [such as task chairs and sit/stand desks] as well as technologies [double screens and adjustments to screen heights]. They questioned how these modifications would be supported if they needed to move between multiple locations over the course of the day.

Lighting

Lighting includes two categories: Daylighting and Electric Lighting. Daylighting refers to ambient light from the exterior of the building. Electric lighting refers to any lighting provided by fixtures.

Respondents frequently commented on the positive qualities of daylight in Mission Hall.

On the other hand, many also raised concerns about the glare from the overhead electric lighting in the open workspace as well as the lighting in the Focus Rooms. Some respondents requested that lamps be removed above their workstations while others purchased portable shades to reduce the glare.

Some noted that Focus Rooms with windows were sought out due to the otherwise poor lighting in combination with the claustrophobic effect of the small space.

Survey Results

In the survey results, there were varied responses for satisfaction with the amount of light and daylight in individual workspaces. While the satisfaction with visual comfort of the lighting also varied, there were more respondents expressing dissatisfaction than satisfaction ($\mu=0.19$ on a -3 to +3 scale; $n=453$). The primary cause for dissatisfaction with the individual workspace lighting was not having enough daylight (63%; $n=200$).

While many respondents expressed that their ability to complete their work is unaffected by the lighting quality, more responses indicated that the lighting quality has negative impact than positive impact on their work ($\mu=-0.17$ on a -3 to +3 scale; $n=451$).

Lighting in other locations was frequently noted as poor. (Conference rooms at 26%, Focus Rooms at 44% and Huddle Rooms at 30%.)

For other lighting issues, respondents mentioned the importance of natural light, many noting that natural light was lacking in the building. Some others conveyed their dissatisfaction with the overhead lighting as it gave them headaches.

The majority of the respondents indicated that their desk/task light is personally adjustable and controllable in their workspaces (79%; $n=445$). Many responded that they can adjust or control window blinds or shades (29%), and some noted that they don't have control over lighting in their workspace (16%).

CBE benchmark indicated the mean value of 1.43 and 1.04 (on a -3 to +3 scale) for occupant satisfaction with the amount of light in their workspace and with the visual comfort of the lighting ($n=714$).



Personal shades used by Staff at Mission Hall to reduce glare

Preoccupancy Context

In the previously occupied UCSF facilities, the majority of the environments represented this situation. Faculty offices lined the perimeter while most Staff spaces were interior to the building. Although pervasive, interestingly, neither Faculty or Staff identified this limited equality in work environment as an issue in the previous locations.

Comparatively, Mission Hall eliminates perimeter office privileges in order to share daylight and views for all. While not all work environments have equal exposure to the exterior, all have some exposure to the exterior. This is a fundamental shift in the daily experience of Staff as most lacked that access previously. It is also a shift for Faculty who now share daylight and views with their teams. In the preoccupancy most respondents identified this as a common characteristic that they were either looking forward to or were enjoying in the initial time following the move.

Views

Respondents generally appreciate the views from Mission Hall to the overall campus and the bay. Given the open plan, there is greater parity than in previous locations, meaning that more occupants have access to a view.

Survey Results

Survey results indicate that slightly more respondents feel dissatisfied with their access to a window view than those who are satisfied ($\mu=0.18$ on a -3 to +3 scale; $n=455$).

Most Faculty (54%) were satisfied with their access to a window view, with 31% indicating dissatisfaction ($\mu=0.48$ on a -3 to +3 scale; $n=143$).

Preoccupancy Context

In the preoccupancy responses, respondents noted significant differences in views in their previous environments, recognizing that Faculty tended to have premium views and Staff most often had little to no view. While respondents did not complain about this per se, most recognized that Mission Hall would offer more optimal views for all occupants. Responses suggested that this would be a welcome change.

Public Space

Respondents expressed concerns about the dearth of campus life. While they recognize that this is a campus in development, they are dealing with the lack of public space resources on a

daily basis which adds burden to the work day. Most mentioned the lack of nearby food choices, the limited service of the food trucks and the lack of convenient retail.

Preoccupancy Context

Previously occupied facilities had few public spaces, but there were no comments regarding respondents needing more public spaces in their previous buildings or nearby. However many at the Parnassus campus expressed disappointment that they would no longer be proximate to Golden Gate Park.

Respondents expressed concern that the readily available public spaces in Mission Bay were limited. The newness of the campus and its current state of build out leaves a great deal of community still to come. They felt that there was not enough community life yet in Mission Bay.

Many noted that there were few food and retail options nearby to Mission Hall. Most often respondents questioned the timing on the food service vendor for Mission Hall. Some mentioned receiving conflicting communications about when the vendor would be in place and what type of vendor it would be.

Despite this, there were a number of respondents who expressed excitement about being on the Mission Bay campus and the access to public space this would afford with the future development of the neighborhood.

Amenities

Relatedly, respondents expressed concern about how little was initially available in Mission Bay. In every focus group, this issue was raised both in terms of impact on daily routines, but also in terms of lack of information about any progress being made. This is a different issue than the overall connectivity to other campus locations.

Respondents also raised concerns about the stability of Wi-Fi across the building, noting that on 'busier days' it seemed that there was less stability. They questioned what the stability would be if the building were to reach its full occupancy.

Finally, respondents expressed frustration at the overall larger size of the Town Center overall as compared to the smaller pantries. While the Town Center is generally sized, the pantry within the area is quite small. They felt that there was too little space for proper function, citing too few refrigerators, too little counter space and too little prep area given the building population and the fact that there were few food choices nearby.

Survey Results

Survey results suggested that majority of respondents are dissatisfied with amenities nearby Mission Hall ($\mu=-0.80$ on a -3 to +3 scale; $n=454$). This echoes the concerns about the amenities available within Mission Hall, as well as on Mission Bay campus. Both Faculty and the broader respondent group expressed this dissatisfaction.

Preoccupancy Context

In preoccupancy responses, respondents did not identify many facility amenities in their previous locations, but many identified campus attributes that they would likely miss.

In Mission Bay, respondents looked forward to access to the fitness center, landscaped campus, new food options and the overall neighborhood quality. Within Mission Hall, respondents looked forward to internet access throughout the building and courtyard, ample kitchen space and new kitchen appliances including a microwave and coffee maker.

Transportation

Respondents commute times increased, work and life patterns had to shift accordingly, shuttle and rail options were limited as was the municipal bike program. Each of these stressors continues to impact Mission Hall and Mission Bay campus occupants on a daily basis.

Anticipated traffic problems with the development of Warriors Stadium was frequently cited. Respondents were concerned about the potential impact on emergency access to the hospital on game days.

Survey Results

Survey results suggested that majority of respondents are dissatisfied with transportation options nearby ($\mu=-0.26$ on a -3 to +3 scale; $n=453$). This issue is another where Faculty and the broader respondent group fully align.

Preoccupancy Context

Due to their previous locations, in the preoccupancy respondents did not mention transportation issues, but when discussing Mission Hall they mentioned this frequently. Most focused on three issues: shuttle service, commuting time and future campus congestion.

Shuttle service was expected to be limited comparatively as this is a new campus in development and support systems often lag new developments.

Commute times would necessarily shift for those who live closer to one of the other campus locations.

There were a number of respondents who expressed concern about the impact of future development on the Mission Bay neighborhood as housing, hospitals and the Warrior stadium are being planned over the next decade. Campus congestion will accordingly increase as these developments are completed.

These concerns represented a stressor in that respondents identified longer commutes, negative impacts on child care, concern about either driving or having shuttle support when needed and an overall rethinking of their commutation patterns.

Campus Connectivity

Some respondents spoke positively of the relationship to the hospital and clinics while others spoke of the lost connections to the activities on the Parnassus campus. Clinical Faculty described how little they could rely on Mission Hall due to travel time to and from their clinics.

Survey Results

Survey results indicated that the majority of respondents are dissatisfied with amenities and transportation options nearby Mission Hall. Length of commute was a primary driver for the shift in time spent in individual workspaces following occupancy in Mission Hall. Survey results noted negative responses to the distance, travel time and connectivity to the hospital and clinics. Comments included that the distance from the clinical areas makes it difficult for clinicians to use the workspaces in Mission Hall during clinical days.

Preoccupancy Context

In the preoccupancy responses, Mission Bay campus connectivity was considered an improvement particularly by those in leased spaces off campus. However for those located on other campuses, there was concern that connectivity might be reduced given the current level of development near Mission Hall. While some therefore looked forward to being 'back on campus,' others were concerned about the loss of the campus community on the more established campus locations like Parnassus.

Respondents frequently mentioned campus social fabric. They anticipated that the sense of academic community held at the Parnassus or Laurel Heights campus would not be replicated at the Mission Bay campus at least in the near term. However they recognized that longer-term the campus fabric would improve.

Some Clinical Faculty doubted their ability to use Mission Hall as intended due to their need to have quick access to the Clinic and/or Hospital. Clinical Faculty questioned how they would be able to continue to do their work due to a lack of direct proximity to the pediatric hospital. They described finding alternative spaces within either of those locations that would allow them to work nearer to their

practice area. They said that they might use Mission Hall on days when they didn't have clinical rounds, but expected to not use it frequently, if at all, on clinic days.

Culture

Respondents described the impact of noise on their daily work requirements as a key criterion for not using Mission Hall more frequently. Time utilization results also show limited use of Mission Hall, indicating that Faculty have found alternative locations in which to do their work.

Faculty specifically described the loss of departmental culture that stemmed from a lower level of attendance at Mission Hall. These losses were exacerbated by the limited transportation options and limited availability of digital connection alternatives as previously mentioned.

Faculty also described the need to find spaces within the hospital to do their write-ups between rounds as the commute back to Mission Hall took too much time away from the work.

Preoccupancy Context

In the preoccupancy responses, the expressed culture of many of the departments interviewed appeared to relate to how they perceived Mission Hall.

Some saw new possibilities in greater group awareness and collaboration. However, many Research Faculty viewed the Mission Hall facility as counter-productive to broader interdepartmental collaboration. They felt that Mission Hall would be less populated than previous facilities due to the perceived poor qualities of the new environment such as reduced ability to focus. They expected to have to work elsewhere when trying to complete focused tasks such as writing grants or research findings. As a result, they felt that they would lose community cohesion as Faculty chose to work remotely more frequently.

Generations and Perception

Responses varied by age group with more senior Faculty frequently expressing greater dissatisfaction while more junior Faculty were often less so. However, the situations were also reversed wherein established leaders spoke positively of the new environment and junior Faculty expressed dismay at the Mission Hall workplace solution.

Preoccupancy Context

In the preoccupancy responses, demographics appeared to be a factor in level of acceptance of the move. Junior Faculty expressed an ability to adapt to the Mission Hall space. Many respondents of retirement age suggested that the new space would give greater

incentive for retirement. This older generation also discussed ties to physical materials, such as books and specimens and the value of their offices in their current work spaces more frequently. While no one opinion prevailed, there were clear differences in generational perception

Group Identity

Respondents continued to seek guidance on the best means to personalize their environments and on the 'rules' for that personalization. Without that guidance, some groups have taken an ad hoc approach while others wait for direction.



Photo of ad hoc art at Mission Hall provided by the department

Preoccupancy Context

In the preoccupancy responses, some respondents raised concerns about how little departmental differentiation there was in the varieties of work areas. This represented a significant shift from the previous locations in which departments personalized their work areas with artifacts relating to their work. For example, Global Health displayed cultural artifacts from many of the global communities with whom they collaborate. Both colorful and interesting, these artifacts represented affiliative ties to their work with communities. Losing those artifacts represented a loss of a tie to a memory or a relationship in some cases and to group identity more broadly.

Respondents preferred to relocate those artifacts to Mission Hall, but when these requests were made, respondents said that they were told that they could not personalize their group environment.

Respondents desired the ability to personalize the environment in order to recognize group identity per work area and ultimately bring teams closer together culturally. Interestingly, it appeared that teams that expressed closer group identity were more positive in terms of how they would adapt to Mission Hall.

Preferred Adjacencies

Respondents raised undesirable adjacencies as one of the key factors contributing to unnecessary disruption and noise at Mission Hall. For example, respondents noted that some appointment schedulers were collocated with heads-down researchers for no apparent reason. This example was used to identify the misalignment between adjacencies and workstyles and what that subsequently created in terms of tension during the work day.

Staff also raised the concern about incompatible adjacencies between workstyles, citing those who needed to be on calls all day as disrupters to those who needed to do heads-down work.

Survey Results

Survey results indicated that overall, respondents are dissatisfied with noise level in their workspace ($\mu = -2.01$ on a -3 to +3 scale; $n = 456$), while some noted that phone conversations are distracting. Cell phone noise was specifically highlighted as being problematic.

Comparatively, CBE benchmark indicated that average occupant satisfaction with the noise level in their office was 0.39 on a -3 to +3 scale ($n = 714$).

Preoccupancy Context

In preoccupancy responses, adjacency preferences were frequently mentioned with respect to their importance to workflow, access to equipment and ultimately to patients. Cultural preferences by Faculty and Staff typologies were identified.

Research Faculty prefer to be near those with whom they collaborate. Clinical Faculty noted a higher preference to be adjacent to the clinic and/or hospital than their primary team as their access to their patients is most critical. Respondents who rely on specialized equipment for their work prefer to be located near that equipment.

More broadly, respondents who were dispersed from their colleagues in their previous spaces looked forward to being collocated in the new building. Other individuals who were previously collocated with their department looked forward to being in the same building as other departments. These comments were made by respondents of both Clinical and Research groups.

Respondents questioned the logic of some adjacencies with other departments within Mission Hall. They felt that there had been little consultation as to the appropriate adjacencies given the varieties of workstyles that needed to be accommodated.

Research Staff raised concerns about whether or not they would have proximity to the Faculty with whom they work. Staff prefer to be near Faculty in order to provide quick support responses. Clinical Staff varied in their opinions as some support Clinical Faculty in the clinic or hospital while others support those Faculty remotely

Wayfinding

Site observations show a number of attempts to develop a common wayfinding system. Departments create ad hoc systems and post labels in areas that likely require decision-points for visitors to the area. The lack of a formal wayfinding system for a facility of this scale is surprising given that the work time of occupants is so valued.

Survey Results

Overall, the most telling results come from the survey wherein all respondents noted that their sense of personal well-being, feeling happy to come to work, stress levels and overall personal health were all worse since the move (total responses ranged from 520 to 522). For Faculty, personal well-being mean is -1.38, happiness to come to work is -1.32, stress level is -1.29 and personal health is -0.75 on a -3 to +3 scale (total Faculty responses ranged from 164 to 165). These indicators suggests that Faculty well-being declined overall with the move.

Preoccupancy Context

In preoccupancy responses, respondents did not identify wayfinding as a particular issue in their previous locations. However, in post occupancy responses, most all respondents cited poor wayfinding as a growing frustration at Mission Hall.



SUMMARY

- Perceived lack of control of personal space
- Frustrated by poor building maintenance
- Challenged by facility location and commutes
- Increased time to access the clinic
- Limited neighborhood character as it develops
- Differentiated spatial quality
- Challenged by spatial organization
- Increased space efficiency
- Eliminated shared offices
- Challenged by furniture/ergonomics
- Challenged by lighting quality
- Improved views
- Improved public space
- Yet to be delivered amenities
- Limited transportation
- Limited campus connectivity
- Challenged by culture
- Variance in generations and perception
- Decreased group identity
- Unclear about preferred adjacencies
- Limited wayfinding



Work Effectiveness

Work Effectiveness refers to the ability of participants to do their work within the work environment.

The key issues identified fall into the following categories.

- Distraction
- Privacy (Confidentiality, General Conversations, Visual Privacy)
- Productivity
- Facility Use
- Administrative Burden
- Interactions between Colleagues (Isolation, Informal Interactions, Formal Meetings, Collaboration)
- Sound (Noise Generation, Noise Management)
- Technology (Laptops/PC Dependency, Telephone Use, Wi-Fi, Printers, Technology Support, Conference Room/ Classroom Technology, Consistency, Conference Rooms Microphones, Training, Room Scheduling Software, Mobile Work Tools)
- Storage

Distraction

Of all the topics discussed with respondents, the impact of the new Mission Hall workspace on the performance of individual work proved to be the area of greatest concern. This concern focused on distraction in a shared workspace.

Respondents in all focus groups and interviews mentioned that distraction from sound and visual interruptions as the most significant negative impact to their work effectiveness. Most described the impact as the inability to do their work at Mission Hall and as a result, the need to work from elsewhere. Some described requiring more time to complete the work given the degrees of distraction. Yet others described the distractions in terms of how negatively they impacted the overall community. In attempting to control sound and visual disruptions, simple conversations between colleagues seemed to be occurring less frequently.

Staff were also struggling with distraction. This may relate to the fact that Staff moved from a smaller suite of open workspaces to a larger open floor plan. No longer were they constrained to their workgroup, but instead were located in the midst of multiple workgroups, many of whom did work that was unrelated.

Survey Results

In the survey results, the majority of respondents conveyed that their ability to concentrate on important tasks worsened in Mission Hall ($\mu=-1.45$ on a -3 to +3 scale; $n=543$). For Faculty, the mean was -2.08 on a -3 to +3 scale ($n=169$).

Overall responses varied on the frequency with which they need to work alternative hours to complete tasks, with 56% of respondents noting that the frequency has increased following their occupancy of Mission Hall ($\mu=-1.09$ on a -3 to +3 scale; $n=541$). Faculty responses were predominantly negative, with 73% indicating that they work alternative hours more frequently after the move to Mission Hall ($\mu=-1.66$ on a -3 to +3 scale; $n=169$).

Survey results on group work effectiveness indicated that the majority of respondents felt that group productivity had been reduced since moving to Mission Hall. However, responses to the ability to engage in group work were less negative than those regarding individual work ($n=493$, $n=494$ respectively).

Preoccupancy Context

In previous locations, respondents described a variety of ways that their ability to focus had been challenged. For example, in one group that was located in a very small suite of spaces, respondents described how they had to signal one another when one was on a call with a patient and another was making too much noise. These visual cues guided behavior and were normalized within the group. In another group, a similar strategy was used, but in this case they struggled with background printer noise that was audible to callers. In both situations, Respondents acknowledged the shortcomings of their previous locations and identified coping mechanisms that they had developed to deal with the issues.

Many Faculty voiced how much they needed a door to shelter them from distraction or to signal to colleagues they were unavailable for private conversations. They mentioned that having their own office was both enjoyable and sometimes necessary for their heads-down, focused work. The ability to close a door was the primary issue. They provided examples of door 'ajar-ness' as a criterion or signal to others of whether it is appropriate to engage the Faculty. An open door signals approach is fine. A partially closed door signals that interruptions are possible, but need to be important. A closed door signals no disruption. With these as common cues in the previous environment, and with the loss of these cues in the open work space, respondents were concerned that they would not have choice when it comes to distraction at Mission Hall. They questioned whether there might be visual cues or other coping strategies to guide others to respect heads-down time.

Regardless of previous location respondents were concerned that the new space would produce greater visual and aural distractions. This was perceived as a threat to being able to focus on the work at hand, which in turn may negatively impact the ability to secure grant funding and maintain ongoing research streams.

Comments on visual distraction centered on the lower workstation panels and the lack of private offices for the reasons noted above. Faculty were uncomfortable to see many occupants as well as the ability to be seen. Having spent the majority of their UCSF time in private offices, Faculty questioned how to control the visual distraction as well as how to behave themselves when so visible to their Staff. They gave the example, multiple times, of the potential for others to "tap" them with impromptu questions.

On top of the perceived distractions and impact on focus, respondents were concerned that the lack of private space would result in having to move from workstations to Focus Rooms multiple times in one day. Both mentioned the need to conduct calls with patients in a more private setting due to privacy concerns or the challenging conversations that were often required when addressing health issues.

The anticipation of having to move computer and physical files created anxiety, particularly for those who lacked the equipment necessary for a quick move into a Focus Room. Most respondents noted that they lack the tools [laptop/mobile headset/digitized file access] necessary to take advantage of mobile work and rely significantly on their desktop machines, land lines and nearby paper files.

While being mobile is very much a premise of Activity-Based Workplace, it is clearly not in alignment with participant work styles and associated functional needs. They expressed concern because they have established ways of working and have few coping



Posted sign to reduce distractions

mechanisms and technologies to use in this new environment. Moreover, as this environment was not one that they sought, nor were involved in developing, they questioned how it would actually support their work.

In the preoccupancy study, comparatively fewer Staff expressed concern about distraction. This is perhaps an obvious outcome as Staff have mostly been located in open work environments in their previous locations.

Privacy

The issue of privacy occurred in almost every discussion. While respondents previously functioned in either private offices or suites of spaces and managed privacy issues within their respective teams, one of the greatest concerns about moving to the Mission Hall campus was a perceived lack of privacy.

Privacy comments fell into three categories.

- Confidentiality
- General Conversations
- Visual Privacy



Open office environment at Mission Hall

Most respondents underscored their concerns about confidentiality of patient information, their worries about others overhearing phone calls and private conversations and the inability to control the view to their monitor and therefore the material on the monitor (Figure 18).

While all acknowledged that they'd been made aware of the building being HIPAA compliant, they questioned the legality versus the intent of the law. While technically compliant, they felt that they were disserving patients with so much information available to others to see/overhear. Many examples included respondents having heard conversations that they were uncomfortable hearing as well as finding printouts on the printers that should have been confidential.

Respondents also noted the challenges stemming from always being 'on display' with the lower workstation panels and the transparent walls of Focus and Huddle Rooms. While some of those rooms were retrofitted with film to reduce visibility, the overall sense was that there was simply nowhere to be truly private.

Staff held similar opinions to Faculty on all of the privacy concerns.

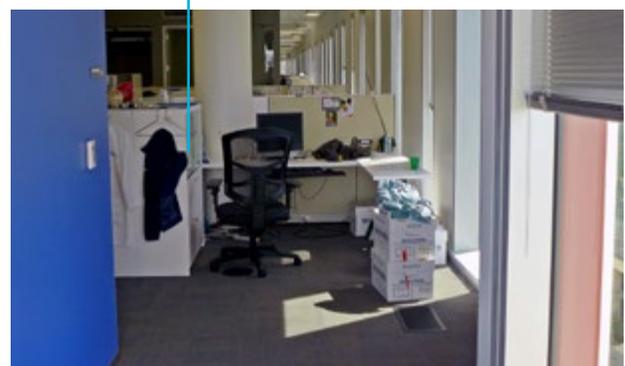
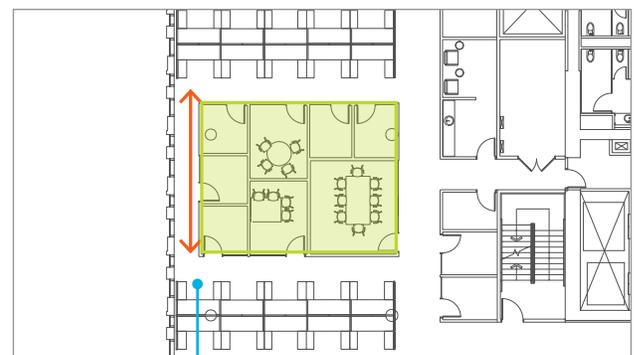


Figure 18 Example of corridor that terminates in a direct view of an individual's monitor.

Survey Results

Survey results showed that majority (79%) of respondents felt that their ability to have a confidential conversation worsened at Mission Hall ($\mu=-1.74$ on a -3 to +3 scale; $n=542$). 92% of Faculty respondents felt that it got worse ($\mu=-2.31$ on a -3 to +3 scale; $n=169$).

When asked specifically about the ability to have conversations in their workspace without neighbors overhearing and vice versa, Faculty mean was -2.39 on a -3 to +3 scale ($n=143$).

Comparatively, CBE benchmark indicated the average score of 1.04 on a -3 to +3 scale for the occupant satisfaction with the speech privacy in their workspace ($n=714$).

The majority (78%) of total respondents ($\mu=-1.50$ on a -3 to +3 scale; $n=465$) expressed their dissatisfaction with the level of visual privacy in their individual workspace. Those who are dissatisfied identified workstation partitions being too low as a major problem. Too many people walking by their work area and high density with too little space separating people were noted as key factors contributing to their dissatisfaction. In qualitative responses, some mentioned their concerns over people seeing confidential materials on their computer monitor.

83% of Faculty indicated that the extent of visual privacy interferes to some degree with their ability to get their job done ($\mu=-1.65$ on a -3 to +3 scale; $n=147$).

Preoccupancy Context

Respondents felt that an open office environment would not be conducive to maintaining patient confidentiality. They expressed concern that the environment, while technically HIPAA compliant, would not allow for the degree of patient confidentiality that is required.

Respondents noted that significant periods of the day are spent in conversation with others, either in person or on the phone. This is how they problem-solve and handle the work. They expressed concern that in the new environment they would be hesitant to have these conversations in the open office. The hesitancy stemmed from a perceived lack of privacy for both their conversations and the patient information that might need to be discussed.

Respondents similarly noted concerns about visual privacy of both their computer screens and the paperwork on their desks. They were worried that others could easily walk by and see these materials, breaching privacy policies and compromising confidentiality.

A second issue of visual privacy stemmed from the stress of work. Some examples were related to respondents who often have very difficult patient conversations or have extremely stressful surgical

or clinical engagements. The most telling example was a concern for Faculty who might lose a patient in surgery and need to return to Mission Hall to write up the case. In previous locations Faculty had their offices to use to recover from these very challenging events. Respondents questioned how that recovery would occur in a workstation. As there are no Faculty lounges or other designated private spaces and as all Focus Rooms and Huddle Rooms have transparent walls, there would be no environment that provided the much needed visual privacy for Faculty.

Respondents noted a variety of perceived risks to privacy in Mission Hall. It seemed imperative the UCSF structure some sort of engagement to address these issues at the department or floor level. The unanswered, or unsatisfactorily answered, questions on this issue continued to be part of the respondents hesitation to embrace Mission Hall.

Productivity

Respondents said that their productivity had been negatively impacted. Most said that they felt that it took longer to do their work and that they were struggling to be productive in the new environment. While a longitudinal study will be necessary to truly capture impacts on productivity, respondents were consistent in their anecdotal descriptions of lost productivity.

Survey Results

Survey results indicate that the majority (67%) of total respondents ($\mu=-1.12$ on a -3 to +3 scale; $n=537$) felt that their overall individual productivity worsened in their current workplace. For Faculty, the mean was -1.80 on a -3 to +3 scale ($n=169$). When asked specifically about how their current workplace affected their length of time to prepare research proposals or write academic papers, Faculty noted a significant impact with a mean of -1.74 on a -3 to +3 scale ($n=166$).

Preoccupancy Context

Productivity was a major point of discussion in the preoccupancy focus groups and interviews. In addition to questions directly targeted at productivity issues, respondents offered feedback related to productivity throughout the entire discussion. Overall, most felt that the new environment at Mission Hill would ultimately reduce productivity as compared to other facilities, although some foresaw an increase in productivity. Of those that voiced concerns regarding productivity, many predicted that there would be a decrease in the ability for Faculty to produce journal articles, obtain grants, and provide patient care at the same high level as they had in the past. This is particularly troubling as most are self-funded from those grants.

More optimistically, some believed that Mission Hall could increase connectivity among previously distributed departments and through increased connectivity perhaps increase collaboration and opportunities for research.

Respondents did not typically cite challenges to their productivity posed by their previous physical environment. Some did do so when discussing their dispersed teams and how this impacted their ability to come together around work practices. Often these productivity challenges were related to individuals balancing the multiple roles of administrator, educator, researcher and physician.

Respondents expressed trepidation at their ability to perform at previous levels within the new work environment. This was a manifestation of the real risk of losing funding volume and ultimately impacting both research and jobs.

Facility Use

Respondents said that they saw colleagues less than previously and regretted the loss of connectivity. They specifically noted that these concerns were previously voiced and had in fact manifested after the move.

Time utilization studies back up these results as the building on average shows 30-34% utilization across the two separate studies.

Preoccupancy Context

In the preoccupancy responses, many respondents noted that their existing facilities allowed for a high degree of productivity and that they used the facilities frequently. Comparatively many felt that the new space would be used infrequently. They cited the lack of private space, lack of space for paper materials, and the potential for interruptions as anticipated causes of reduced use.

Although anecdotal, some who had already relocated indicated that employees have been coming into the office less than before as more chose to work from home. They projected that the pattern would increase and predicted a decline in productivity as a result. Opinions on decreased utilization were common to Faculty and Chairs.

On the other hand, some suggested that they understood that their previous space was often under used and that there was waste associated with how office space was allocated at UCSF. For these respondents, while the logic of the Mission Hall approach was understood, their negative perception of the process and its resulting solution remained.

Administrative Burden

Respondents spoke of the lack of building governance to guide daily administrative issues. Examples included simple issues such as maintenance, but also larger issues such as how to handle visitors and recruits and how to manage shared supplies.

Preoccupancy Context

Respondents commented that the major challenges to productivity in their previous spaces were administrative burdens, and discussed the challenges of dealing with unbalanced workloads. When referring to Administrative Burden, respondents gave examples of funding reductions and increased reporting requirements.

Interactions between Colleagues

Respondents commonly said that they'd lost a great deal of connectivity between colleagues. They suggested that the environment discouraged attendance at Mission Hall and as a result they saw their colleagues less frequently.

They also felt that when colleagues were at Mission Hall they were discouraged from connecting as conversations were perceived to be disruptive to others. Their assumptions were that it was a requirement to 'go to a Focus Room to have any conversation lasting a few minutes or more.' This in turn led to less frequent conversations as well as more self-conscious behaviors among colleagues.

Survey Results

Faculty noted that their access space to work with others on group tasks and to hold spontaneous meetings without distracting others was basically the same as in previous locations ($\mu=0.20$ and 0.15 on a -3 to $+3$ scale respectively; $n=166$). However, they also noted that it was a little worse when it came to coordinating tasks and solving problems with others ($\mu=-0.59$ on a -3 to $+3$ scale; $n=166$ and 165 respectively).

Preoccupancy Context

Interactions between colleagues was a common topic of conversation, and represented a wide range of viewpoints. Interactions include opportunities for reducing isolation, informal interactions, formal connections within and across departments and collaborations on work. Most viewed interactions as a generally positive characteristic of the workplace.

Respondents were specifically asked to comment on how well their previous locations supported collaboration and interaction. Responses were evenly distributed between those who considered it well supported and those who considered it poorly supported.

Isolation

Respondents said that they did see some colleagues more than previously, but felt overall that they were more isolated due to the tendency to limit interaction in order to control sound. While perhaps somewhat more visually connected, they felt more disconnected.

Survey Results

In the survey results, about half (54%) of the respondents noted that their access to space to hold spontaneous meetings without distracting others improved after their occupancy in Mission Hall ($\mu=0.54$ on a -3 to +3 scale; $n=521$).

Comparatively, CBE benchmark indicated that the average score for occupant satisfaction with the ease of interaction was 1.49 on a -3 to +3 scale ($n=714$).

The responses varied on the awareness of what others are working on ($\mu=-0.06$ on a -3 to +3 scale; $n=515$) and the ability to quickly share information with others ($\mu=0.03$ on a -3 to +3 scale; $n=513$). Overall, the average response indicated that respondents felt the same after their occupancy in Mission Hall.

Preoccupancy Context

Some respondents described isolation as a negative aspect of their previous locations. This comment was most often associated with individuals working at the Parnassus campus space. Some of these groups felt isolated and disconnected from colleagues due to the organization of suites off of primary circulation. The suites reinforced the small group, but created separations between groups. These respondents recognized that they would reduce their separation in the move to Mission Hall.

Informal Interactions

Respondents said that they felt they had less frequent informal interactions as occupants attempted to control sound. On the other hand they complained about the noise generated by others who were having informal interaction in the open office areas or in the Town Center or Breakout Areas or Copy Areas where sound easily carried to adjacent heads-down areas (Figure 19).

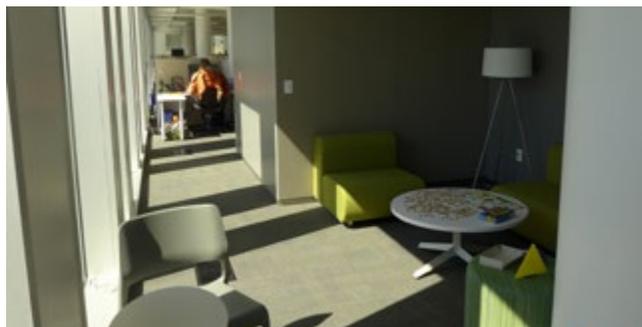


Figure 19 Breakout Area adjacent to workstations

Comparatively, Staff expressed no distinct opinion about connectivity and impact on their work in the preoccupancy. In the post occupancy responses however, most Staff noted that they had 'lost' connection between colleagues since the move and felt similar about the noise in the open office and its impact on informal interactions.

Survey Results

73% of Faculty who were dissatisfied with the ease of interaction with others noted that conversations are discouraged because of the noise is distracting to others ($n=67$).

Preoccupancy Context

Most felt that increased interactions and therefore collaboration within their group would be easier in Mission Hall. For those who felt that their process does not require collaboration, increased interaction was not a desired outcome. Many referenced Google as a negative example of forced collaboration. Most often the phrase 'We're not Google' was used. By this they meant that their work tended to be more focused on individual contributions to a larger research agenda whereas Google worked more on a daily if not hourly collaborative

process. They were also concerned that a 'tech company application' would not align with that of an academic setting. They noted that the work differs and the workplace should differ as well.

Most respondents agreed that informal interaction was a good thing while some expressed concern about the distraction of informal interactions.

Some stressed the importance of in-person face-to-face collaboration and the value of interaction while others felt that remote collaboration was more important to their work process. This was in part due to the organizations with whom they were collaborating and the nature of the work.

Clinical Faculty indicated that connectivity between occupants was less important to their work process as they were patient-focused. Their greatest value was in the work they did for their patients, not in connecting with their colleagues. This is not to suggest that collegiality is unimportant, but is a lower priority than patient care. Research Faculty varied in their opinions with some noting that they wanted less connectivity in order to focus more and others noting that they wanted to increase connectivity.

Formal Meetings

Respondents spoke highly of the Conference Rooms and their availability. They also noted that Focus Rooms and Huddle Rooms are always available and often under utilized.

Respondents did express concern about the lack of a common scheduler for the building and the fact that Focus Rooms and Huddle Rooms are not scheduled. As a result, it was difficult for respondents to direct others where to meet, to invite others to the floor for meetings, and to find those with whom meetings had been scheduled. The lack of a common scheduling software introduced unexpected challenges on a daily basis, negatively impacting work effectiveness.

Survey Results

The majority of respondents (63%) felt satisfied with Conference Rooms in Mission Hall ($\mu=0.97$ on a -3 to +3 scale; $n=464$). For Focus Rooms, about half of the respondents expressed their satisfaction, with 33% indicating their dissatisfaction ($\mu=0.34$ on a -3 to +3 scale ; $n=462$). Slightly more than half of respondents (58%) noted their satisfaction with Huddle Rooms ($\mu= 0.70$ on a -3 to +3 scale ; $n=461$). While dissatisfaction with Focus Room was more pronounced compared to the other two meeting spaces, negative responses remained below 50% of total responses.

The suitability of equipment was identified as a key contributing factor to the dissatisfaction with these formal meeting rooms.

For Conference Rooms, knowing how to use the equipment provided was one of the major issues that respondents identified (56%; $n=81$). In open responses, some cited negative responses to the quality and reliability of technology in Conference Rooms.

Respondents also indicated availability of Conference Rooms (51%) as another key driver of their dissatisfaction. While the availability issue was less pronounced for Huddle Rooms (39%; $n=108$) and Focus Rooms (12%; $n=152$), many indicated that occupants often 'take over' those rooms to take the place of their ineffective personal work space.

Suitability of furnishing to support their work was mentioned as one of the main problems that respondents identified for both Focus Rooms (57%) and Huddle Rooms (47%). Some indicated that furniture in the Conference Rooms was uncomfortable or inflexible.

Preoccupancy Context

Respondents described work processes that involved formal meetings throughout the course of the day. Most respondents did not have difficulty holding meetings in their previous locations, whether in their offices or in Conference Rooms. Many respondents mentioned that offices in previous locations gave them more flexibility, as they could be used as an individual workspace or as a meeting space when needed.

Comparatively, they hypothesized that Mission Hall reduced flexibility because formal meetings can not be held in a workstation. Respondents tended not to recognize Focus Rooms and Huddle Rooms as offering similar flexibility because they are not owned by a department in the same way that offices were in their previous locations.

When discussing Mission Hall, respondents acknowledged the increased provision of Conference Rooms as well as Focus and Huddle Rooms. However, they were concerned about the scheduling of shared Conference Rooms. Long lead times for meetings, inconvenience, and ease of scheduling were all cited as concerns. These opinions were common with little variation by participant type. However concerns were mentioned more often by Staff, who are often responsible for scheduling.

Collaboration

Respondents described the challenges of working across the various UCSF locations. The commute time between locations represented a significant impact on work time and yet there

were few ways to connect otherwise. Some reported attempts to virtually participate in Grand Rounds, but then described the difficulty in making the technology work and/or funding the technology support for that meeting.

Also respondents mentioned the overall impact of the commute to Mission Bay as a discouragement for others to come to Mission Hall. The public transit limitations to the area and the challenge to parking nearby coupled with the travel time negatively impacted willingness to come to Mission Bay.

Preoccupancy Context

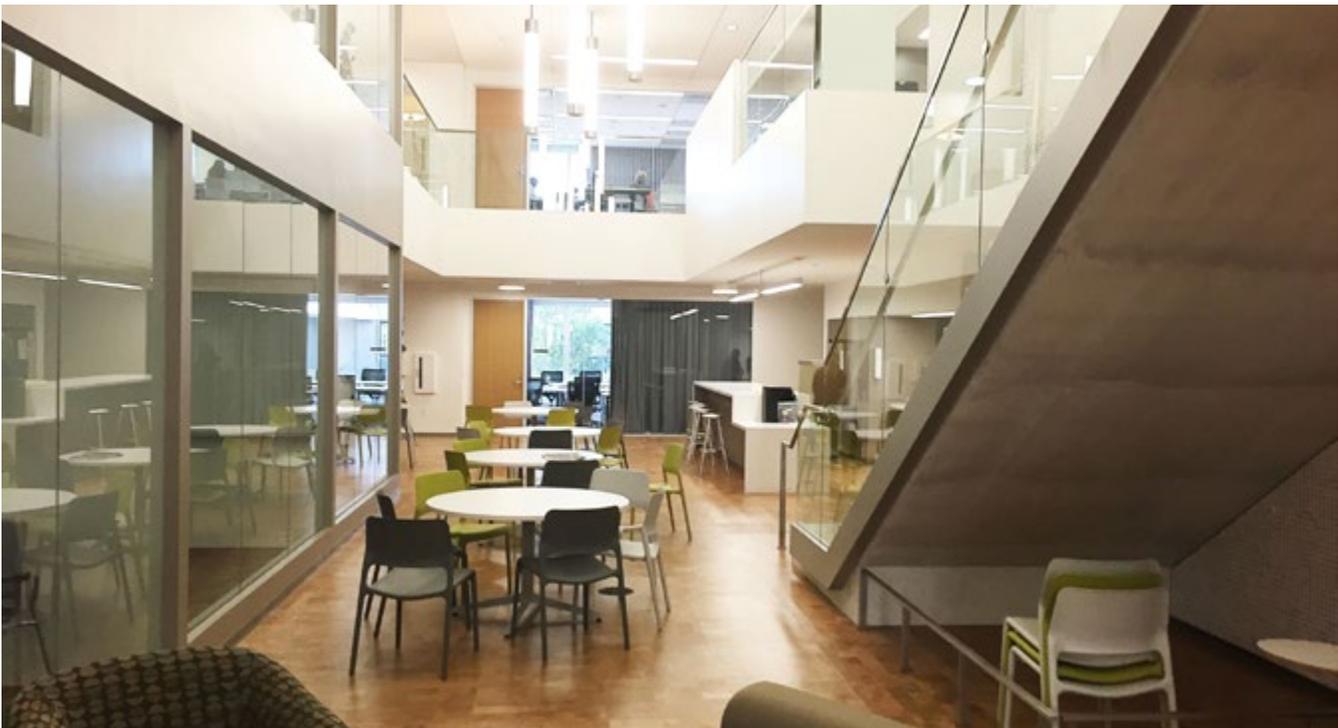
In the preoccupancy responses, some felt that the new environment would have negative impacts on their ability to collaborate with partners from other locations. While Focus and Huddle Rooms would be available, they felt that the environment would not be one that their research partners would want to use.

No single location satisfies the complexity of each respective department's connectivity needs, so it is expected that some will find increased opportunities and others find decreased levels of connectivity. The challenge is to find a balance that serves the majority of needs and minimizes unintended negative impacts.

For departments that faced challenges due to individuals moving across multiple campuses and work settings, some department heads had previously imposed mandatory days where individuals were expected to commit to working at one location to satisfy weekly departmental meeting requirements. Given the complexity of schedules for those working across multiple campus locations, this was a simple way to assure that all connected at least weekly. Some questioned whether a similar strategy might be necessary at Mission Hall.

Sound

Respondents flagged noise as a major concern for Mission Hall. Many of the respondents feel that their work on a day to day basis requires quiet and that the open office would be too noisy. None identified the opportunities afforded by overhearing although some did indirectly address this issue by describing greater connectivity between colleagues. Moreover, none felt equipped to address noise problems that might occur. This was primarily due to the fact that they would be joining a larger cohort that had not established relationships and lacked the norms that had served these smaller groups well while in their suites.



Town Center at Mission Hall

Noise concerns fell into these categories.

- Noise Generation
- Noise Management

Preoccupancy Context

In the preoccupancy respondents described shared conversations in their previous environments that enabled them to help one another in shared problem solving. In one example, respondents who were located in a small suite explained how they can step in to help a colleague who is on a particularly tough call. By overhearing, they are able to support one another more.

Respondents also commented on the ways in which their previous environments managed sound and the ways in which they were challenged by noise. Walls between suites contained the sounds relative to the teams involved. Offices contained sounds relative to the discussants. Within these zones, visual cues allowed groups to manage noise among themselves. In both cases there were relationships established that allowed the sounds and the noises to be addressed appropriately.

Noise Generation

Town Centers and Copy Areas as well as the pre function space outside of Conference Rooms were flagged as disruptive to nearby occupants. Groups with significantly different workstyles [on calls frequently versus doing heads-down work] were collocated adjacent and as described earlier in this report were disruptive to work effectiveness. Some identified use of speakerphones, either cell or desk phones, as particularly disruptive. Still others referenced the lack of sound separation between Focus Rooms and nearby workspaces as a problem. Breakout Areas were also cited as noise generating areas as was the Town Center. Finally, respondents flagged the prefunction space outside of larger Huddle Rooms and Conference Rooms has having 'spillover' noise as users entered and left meetings.

Survey Results

In the survey results, the majority (74%) of all respondents were dissatisfied with the noise level in their workspace ($\mu = -1.29$ on a -3 to +3 scale; $n = 457$). Dissatisfaction with the sound privacy in their workspace was even more pronounced (90%), with less than 5% of respondents noting that they are satisfied with the sound privacy.

Respondents ($n = 413$) identified people talking (88%) and overhearing their conversations (85%) as the major factors contributing to their acoustic dissatisfaction. Office equipment noises from phones, photocopiers and fax machines (29%) were noted as a factor. Some cited noise from people walking and ambient noise from people working (e.g. typing). The raised floor was mentioned multiple times as a noise source. Cell phones were consistently mentioned as a noise source.

The majority (82%) of all respondents expressed that the acoustics in their workspace interfere with their ability to get their job done ($n = 456$).

Preoccupancy Context

In the preoccupancy, respondents were worried that those located near noise generating locations, specifically Conference Rooms or Communal Spaces, would not be able to concentrate. Specifically, adjacency to the Town Centers was a concern as all expected these to be areas that encouraged community and thus encouraged noise. They expressed concern that areas of sound generation in Mission Hall had not been adequately zoned away from those areas intended for doing quiet work.

They also expressed concern about the adjacencies between different groups and whether consideration had been given to the type of work that groups do [more on the phone or more heads down] as part of the space assignment. There was a concern that type of work activity should be considered more important than work group membership when planning adjacencies across a given floor in the new space. Without information to explain space assignments or to even identify the adjoining groups, respondents assumed that there would be challenges and felt that they had no voice in helping to solve the potential problem.

When reflecting back to previous locations, some respondents noted adjacencies to noise-generating activities as problematic and so expected similar problems at Mission Hall. Examples included reference to pantry spaces where colleagues come together and enjoy conversation and reference to noise-generating equipment, such as copiers/printers, within the spaces.

Respondents' preferred to collocate with their group, however when adjacency to noise generating activities were part of that location, they preferred to be located separately. The message was that group cohesion would be nice, but quiet space would be more important.

Additionally, respondents expressed concern related to how groups were positioned next to each other related to noise levels. This issue related to two factors. First, respondents were unclear about who their neighbors would be and whether those neighbors would conduct work that generated more noise. Second, they were unclear about whether those neighbors would overhear conversations which relates back to the privacy concerns previously mentioned.

Respondents were also concerned that the open office will encourage chatter throughout the day and that this will inhibit concentration.

Many expressed a perception that low panels and hard surfaces would exacerbate noise levels in the office.

Finally respondents noted that noise coming from traffic or nearby construction would be distracting. As there is significant construction that will be occurring in the Mission Bay neighborhood over the course of the next five years, this was seen by respondents as another impediment to concentration.

Noise Management

Respondents described how individuals would 'shush' one another in the open office area. This negatively impacted the sense of the group as a whole and discouraged informal interactions as previously described.

Most respondents noted that there was no obvious building protocol to follow regarding behaviors or norms and protocols. Without guidance, occupants were doing their work as needed, but unintentionally negatively impacting others.

Noise Management has a de facto approach that assumes that occupants shouldn't speak to one another in the open plan for more than a few minutes. Otherwise, they're to conduct their conversations in a Focus Room. The awkwardness of this approach has in turn reduced the sense of collegiality and reinforced the negative behaviors that most respondents described.

Headphones are the best resource that occupants have to manage sound at the individual workspace. Most described investing in noise-cancelling headphones in order to try to eliminate the impact of ambient sound on work effectiveness.

References to white noise, or pink noise, typically were simply to say that it didn't solve the problem.

Respondents described their frustration at being unable to manage the noise well enough to do their work effectively and the frustration at the negative behaviors demonstrated by colleagues in attempting to manage the noise.

Survey Results

18% of total respondents (n=413) noted that white noise was one of the factors contributing to dissatisfaction with the acoustics in their workspace. In the qualitative responses,

some cited that white noise is distracting to their work. Using headphones to block unwanted noise was mentioned as a common solution to noise management in the workspace.

Preoccupancy Context

In the preoccupancy, respondents questioned how they would manage noise in the new open office at Mission Hall. Topics of concern included office etiquette, material choices, use of headphones, and white noise.

Many respondents worried that they would not have appropriate office etiquette in place to discourage people from making too much noise. They were concerned that destructive methods would be used in the absence of expected norms, straining interpersonal relationships. Respondents were not aware of any neighborhood etiquette or other change communications or training resources to help with this issue. Some respondents proposed that the open office may allow for greater self-awareness and awareness between groups which might lead to better self-monitoring for sound attenuation.

Respondents suggested that headphones might be used to shut out noise from others. Concerns included the inability to hear the phone as calls come in, the inability to hear a colleague who may be standing adjacent and needing to collaborate and the perceived social disassociation that headphones convey.

Respondents raised questions about the white noise system in the new space. Respondents were aware of the benefits of the noise dampening systems, but these competed with recent news stories about noise problems in open workplaces. Some mentioned that white noise is not desirable and potentially even distracting. Others were skeptical about whether it would be enough to mitigate noise.

Technology

Respondents were asked directly about the effectiveness of the technology in their current work settings and the technology requirements to make Mission Hall successful. Responses did not vary greatly except for those respondents who cited the need for specialized equipment. In general, respondents seem dissatisfied both with their previous technology and with a perceived lack of suitable technology at Mission Hall.

Concerns focused on these categories.

- Laptop / PC Dependency
- Telephone Use
- Wi-Fi
- Printers
- Technology Support



Open office environment at Mission Hall

- Conference Room / Classroom Technology
- Consistency
- Conference Rooms Microphones
- Training
- Room Scheduling Software
- Mobile Work Tools

Laptop / PC Dependency

Respondents cited numerous examples of the limitations that their existing technology introduced to using ABW. For example, some using desktop machines were not able to move between their workstation and Focus Rooms without printing materials and taking hard copy notes, then returning to their workstations to input the notes on the electronic form. They described the amount of additional time spent in trying to make the system work and questioned the value of their time by comparison to the value of the costs saved in the development of Mission Hall.

Preoccupancy Context

Prior to occupancy, many respondents expressed concern about moving to a workplace that required the use of laptops. The major concern was that many people did not have laptops and would therefore not be able to work effectively in the new building.

This represents a fundamental gap in the ability for occupants to take advantage of the Activity-Based Workplace at Mission Hall. The premise of ABW is that occupants have choices across the workday in terms of where they work. The tool required for that choice to be possible is the laptop. Given that the majority of the respondents did not have, nor have plans for purchasing, a laptop, it appeared that they were not positioned properly to take advantage of the ABW.

In speaking with Chairs, several noted that their departments did not budget for laptop purchases within their grant structures, which was their primary funding source. As a result, there were no funds allocated to provide the department employees with the technologies needed to use the ABW.

Others expressed concern about using a laptop at work in general, including ergonomic issues, privacy issues, and worrying about how mobile technology would be secured in an open office environment.

In addition, the quality of existing desktop PCs was a concern for many respondents. Their PCs were regularly described as unreliable and lacking in functionality. Technology support was also described as poor.

While the new workspace is highly dependent on an activity based workplace model relying heavily on laptops and other mobile devices, some individuals and departments did not know how, when or if they would obtain this technology.

Telephone Use

Respondents described the limitations on the call transfer, the time spent transferring calls, the awkwardness of asking a patient to wait while the participant found an open room to take a call and other frustrations that illustrated the limited technology/facility alignment. This represents a significant challenge for ABW.

Preoccupancy Context

Prior to occupancy, respondents indicated that telephone use was a major part of their daily job. Many expressed a need for mobile phones to take into private rooms. Others stressed the need for private phone rooms. Some respondents indicated that they enjoyed using their headsets, but many expressed confusion or concern about not using a traditional phone. Some did not feel they would be able to begin a call from their desk and continue in a private room. Without the ability to do so, they would be unable to take advantage of the privacy afforded by those rooms which in turn would exacerbate the challenges to overall privacy and productivity previously identified.

Wi-Fi

Respondents commented on the lack of reliability of the Mission Hall Wi-Fi. They noted experiences of peak load drop-offs in the system and asked whether bandwidth was properly sized for the number of occupants in the building.

Given that the occupant load never exceeded 50% of the overall building capacity, the stability of the Wi-Fi system may need further evaluation.

Preoccupancy Context

Prior to occupancy, respondents expressed the need for reliable Wi-Fi and indicated that the Wi-Fi in previously occupied buildings was inconsistent and unreliable. In turn they looked forward to the pervasive Wi-Fi available at Mission Hall.

Printers

Respondents described lengthy waits at the printers. The time required to enter the code and wait for the print as compared to the printing load per Copy Area were frequently raised in Focus Groups. Most described how little time they have to give and how much time was wasted waiting for prints.

Almost all respondents raised this as an ongoing frustration and described workarounds to buy small desktop printers to eliminate the lost time.

Preoccupancy Context

Prior to occupancy, respondents noted how important printers were to work processes. HIPAA requirements regarding patient confidentiality and physical document output were also expressed. Respondents appeared to be unclear as to how to manage code-access printing and the HIPAA requirements.

Technology Support

Respondents raised numerous concerns relating to Technology Support. These ranged from unexpected charge backs to slow response times to equipment that didn't work as needed. They also described having to purchase their own connections for equipment that was provided in the Conference Rooms. For example, HDMI cables were a source of frustration to almost all as many had to identify which to purchase, then go purchase these, and then manage access to these cables as the rooms were not properly set up to accept laptops.

On the whole, respondents felt that they lacked the necessary technology support to take advantage of the investments made in the facility and felt frustrated by the limited support received from the various technology teams. This in turn negatively impacted their ability to focus on their primary work.

Preoccupancy Context

Prior to occupancy, respondents expressed concern as they were transitioning from a School of Medicine technology support team to the UCSF Information Technology team. They felt unsure of the responsiveness that they would receive and felt that delays would negatively impact their work.

Conference Room / Classroom Technology

In general, it appears that there is a significant gap between the technology provided, and the technology required for effective use of ABW. Most occupants lack the laptops/headsets necessary to support a mobile work day and they lack both the training and the confidence of technology support. Without appropriate technology support, the application of a mobile work environment is quite challenged.

Staff concerns on pre and post occupancy aligned with Faculty concerns.

Preoccupancy Context

Prior to all moves being completed, respondents who had already relocated to Mission Hall noted that not all rooms had the technologies as previously promised. Some rooms were also identified as having malfunctioning technologies. Respondents had no information about the timing for corrections to these problems and as a result were quite frustrated.

These issues relate to the previous description, but as of the post occupancy research in late Spring, many of these issues from October 2014 were unresolved.

Consistency

Respondents expressed concern with the inconsistency in technologies available within the same types of spaces. For example, Huddle Rooms were not consistently fit out with the same technologies and as a result, respondents noted the challenges that stemmed from trying to understand the various resources available and their relative locations. They described the same variability across Focus Rooms, Conference Rooms and Individual Workspaces.

These variations across workspace types then decreased efficiency of use as respondents sought certain rooms with certain technologies while eschewing the others. Use was based on technology availability and with the inconsistency in those technologies, efficiencies also dropped. This increased their frustration as well as impacted their time.

Conference Rooms Microphones

Conference Room microphones were not previously available for most respondents. However Mission Hall is equipped with microphones in most Conference Rooms. Respondents described their excitement at seeing these technologies initially, but expressed their frustration at the poor sound quality and the inability for them to use these tools for remote meeting attendees. Voice legibility was not acceptable and numerous service calls had been placed.

Preoccupancy Context

In the preoccupancy responses, respondents sometimes mentioned challenges with availability of technologies across their various work environments. Most saw the move to Mission Hall as an opportunity to have greater consistency in the available technologies across their various work environments.

Training

Respondents described frustration with the approach to technology training in general. They noted that it was clear that investments had been made to provide better technologies, but that UCSF had failed to properly training occupants on how to optimize their use. Some respondents described this as a lost opportunity to take advantage of new tools in order to improve teaching and research effectiveness. They described not knowing what they didn't yet know about the tools and the resulting frustration from this situation.

Room Scheduling Software

Respondents noted increasing frustration with the lack of Room Scheduling Software to better manage the use of Focus and Huddle Rooms. While these were initially intended to be neighborhood resources that were unscheduled, the lack of the ability to schedule also means that occupants cannot tell others where to meet. Instead a group gathers and goes from door to door to find a suitable room for meeting, choosing between availability, furniture, technology, and number of seats. Or an individual who has called the meeting does the same and then needs to contact all attendees to explain where the meeting will be held. This is compounded with the lack of wayfinding in the building as visitors to the floor or even to other areas of the same floor have little guidance about how to find rooms. This introduces extra work for all involved.

Mobile Work Tools

Survey Results

While responses varied, about half of the respondents expressed satisfaction with the equipment provided for their workspace, with a mean value of 0.67 on a -3 to +3 scale (n=455). Less than 20% expressed their dissatisfaction. For those who were dissatisfied (n=90), half of them identified portability as a primary issue. Adjustability (41%) was also another key contributor to occupant dissatisfaction. Many qualitative responses indicated that occupants were not provided the technology they need, such as computers or monitors, or had to purchase their own technology. Some respondents said that they were not provided any equipment at all. The age and quality of technology was also frequently cited as a problem.

Preoccupancy Context

In the preoccupancy responses, respondents spoke frequently about how they managed their time and where they worked over the course of the day or week. Many Faculty traveled across a number of campuses over the course of the week and the move to Mission Hall signaled a significant disruption in how Faculty do work across the UCSF system. Responses varied by job function, with some spending a lot of time in the office and others spending far less. In general, most respondents responded that their time was divided between multiple locations on a daily basis. Many use UCSF shuttle systems and work on the shuttle while commuting between campuses. Others regularly travel around the globe and require proper technology to connect with their support teams and departments.

Storage

Respondents concerns on storage focused on reference materials and books that were previously in their offices. There were no complaints related to the lack of speciality equipment or shared items.

Survey Results

In the survey results, total respondents (n=205) indicated that the amount of filing and storage in the workspace (65%) was one of the key factors contributing to their dissatisfaction with the amount of space available for individual work. Lack of adequate storage (70%) was also identified as a major issue contributing to their dissatisfaction with workspace furnishings (n=151).

For Faculty specifically, 74% noted that amount of filing and storage contributed to their dissatisfaction with the amount of space available for individual work (n=90). This was second only to the size of their cubicles (79%).

Preoccupancy Context

In preoccupancy responses, Faculty expressed concern that there will not be enough storage space in the new building for items currently stored in their individual workspace. Questions were raised about where certain shared items would be stored. Respondents toured the team through various storage areas within existing locations and identified the varieties of types of storage that would be needed at Mission Hall. Most expressed that this issue had not been addressed in any of the previous planning discussions that they attended.



Work Effectiveness

SUMMARY

- Increased distraction
- Reduced privacy (Confidentiality, Conversation, Visual Privacy)
- Decreased productivity (Facility Use, Administrative Burden)
- Decreased interactions between colleagues (Isolation, Informal Interactions, Formal Meetings, Collaboration between Buildings)
- Disrupted by sound (Noise Generation and Noise Management)
- Limited personal technology provisioning and limited training for building technologies (Laptops/PC, Telephone Use, Wi-Fi, Printers, Technology Support, Conference/Classroom Technology, Conference Rooms Microphones, Room Scheduling Software, Mobile Work Tools)
- Limited storage



Engagement

Engagement is the level of enthusiasm/emotional commitment that an employee has towards an organization and its values/goals.

This lack of engagement is often interpreted as the UCSF treating Faculty and Staff dismissively or disrespectfully.

The key issues identified fall into the following categories.

- Process Awareness
- Comparative Cases
- Move Management and Communication
- Building Use Protocols
- Adaptations
- Working Elsewhere

Process Awareness

Respondents were unaware of any plans for improvements or other ongoing changes to address their concerns.

Preoccupancy Context

Prior to occupancy in conversations with respondents from different departments, the team found an inconsistent level of knowledge about the design and performance of an activity based workplace. The team also discovered significant differences in preparation for the new move to Mission Hall between departments.

Comparative Cases

Respondents continued to reference the fact that they were the 'guinea pigs' at UCSF. They asked that UCSF publish the results of the project so that other universities learn from its outcomes. They also asked whether UCSF intended to repeat this process elsewhere on campus.

Preoccupancy Context

Prior to occupancy, some respondents reported actively seeking research on the impact of Activity-Based Workplace on overall performance. Technology companies in Silicon Valley, specifically Google and Facebook, were frequently referenced. Respondents emphasized that they did not want to emulate these companies and believe that the ABW is a poor fit for academic environments. Additionally, respondents felt that there was no other space within UCSF or elsewhere in higher education that they could look to as an

example of how ABW might be adaptable to a university setting. The lack of precedent has fueled anxiety about the efficacy of the new environment.

Move Management and Communication

Respondents flagged the lack of communication about improvements in process as well as the lack of communication about the overall research engagement. When reminded of the website resources that had been provided, respondents noted that this mode was not the best for the way that they share and receive information. They asked that alternative, or at least supplementary, means be considered for future communications.

Preoccupancy Context

In preoccupancy responses, there were feelings expressed, mainly by Clinical respondents, that the university had not been as helpful as it should have been in supporting those who are moving. This included not supporting technology as UCSF has shifted to the University-wide IT support system, not providing proper new personal/departmental equipment to take advantage of the ABW, and not providing appropriate volume of transportation/shuttles given the volume of occupants needing to use the services with the relocation Mission Bay.

There was a strong feeling by respondents that the communication about the move had been poor. This included not enough communication, not enough information in the communications, and communications that came too late in the process. Some individuals were not clear if and when they would even be moving. Other move coordinators commented that there were decisions being made very late in the process as to whether certain individuals would be moving. Additionally, it was felt that the overall vision/logic was never communicated.

Building Use Protocols

Building Governance was frequently mentioned in terms of how little had been put into place and how many individual decisions and associated time was required in order to create, on a department by department basis, a workable governance system.

Preoccupancy Context

Prior to occupancy there were many unknowns about building use protocols in the new space. Concerns included ownership/priority users of spaces, technology support, protocols regarding open office etiquette about noise, meetings, and how to manage oneself in the environment, communal space use guidelines for the Town Center kitchen and food rules for the overall building. The lack of early

communication on these subjects created more anxiety about the move. This general lack of information was a common concern shared by most occupants.

Adaptations

At Mission Hall, the team looked for evidence of adaptations of the physical environment as indicators that occupants were trying to improve the situation, a signal of engagement. One department described a series of interventions completed and others planned that focused on improving their immediate work environment. Others undertook art installation programs in order to give identity to their neighborhood. Yet others hosted events in either Town Centers or the common courtyard to encourage greater connectivity. These activities suggest an engaged population, but unfortunately do not represent the majority of the population.

Working Elsewhere

Lack of attendance at Mission Hall is a negative signal of engagement. As described earlier, the use of the building is far lower than intended.

Survey Results

Survey results varied on satisfaction with feeling connected to people in the workplace at Mission Hall and to UCSF as an institution. Slightly more respondents felt less connected. Significantly more respondents felt less engaged with their own work and the unit's work.

53% of all respondents ($\mu=-0.98$ on a -3 to +3 scale; $n=505$) indicated that the feeling valued by UCSF worsened after moving to Mission Hall. However, approximately 81% of responding Faculty ($\mu=-1.88$ on a -3 to +3 scale; $n=164$) felt less valued by UCSF. 66% felt worse about their desire to stay at UCSF ($\mu=-1.27$ on a -3 to +3 scale; $n=164$).

Approximately 38% of all respondents indicated that they are unlikely to recommend UCSF as a great place to work ($\mu=-0.20$ on a -3 to +3 scale; $n=506$). Comparatively 66% of Faculty are unlikely to recommend UCSF as a great place to work ($\mu=-1.09$ on a -3 to +3 scale; $n=163$).



Engagement

SUMMARY

- Frustrated by limited awareness of the overall process
- Feel undervalued by UCSF
- Frustrated by the use of corporate comparative cases and the piloting at UCSF
- Frustrated by the overall move management and communication
- Frustrated by the lack of building use protocols
- Required to adapt or work elsewhere to complete work resulting in less engagement with UCSF

Survey Results

PARTICIPANTS

The Mission Hall survey responses included 585 responses out of the 1213 employees assigned to the building at the time of the study. That's about a 48% response rate.

Faculty represented 30% of the 585 responses. Administrative Staff comprised 26% and Research Staff comprised 22%. The remainder included various Staff, Resident/Post Doc, Nurse Practitioner/Clinician and other positions.

Of the Faculty respondents, 52% had clinical responsibilities while 48% did not.

Nearly 61% of respondents came from private offices (single occupancy or shared with two individual workspaces) while the remainder did not.

UNDERSTANDING OCCUPANT RESPONSES

The intent of this survey is to understand how characteristics of the built environment contribute to the Satisfaction, Well-Being, Work Effectiveness, and Engagement of Faculty and Staff. The questions are grouped under category headings.

The description of **occupant background** will allow the team to look at different segments of our occupant population to see if different job types or other characteristics are affected to a greater or lesser extent for each of these categories. The description of the occupants' **workspace location** will provide the team with information on how variability among workspace locations may affect outcomes. These descriptions will be used to understand response differences based on situation.

Workspace use allows the team to understand occupant use patterns and the varieties of spaces that occupants are using, or not using, to support their work. Occupant responses on these questions will allow the team to understand space use patterns and occupant activities. We can identify spaces that are in high demand and those that are less used. The data will augment our understanding of occupant typologies and allow the team to examine differences in perceptions for different occupant categories. This perception data will be triangulated with time utilization data.

Workspace Layout comparatively polls occupants on specific aspects of the design of the workspace environment; qualities of that environment such as privacy, acoustic control, and so forth; and the effectiveness of features such as the focus and huddle rooms, group meeting rooms and Town Center. This range of issues will allow the team to identify areas of concern regarding workspace needs, and areas of success in supporting work processes.

Individual Workspace Design asks occupants to assess how the design of the individual workspace environment supports their work. Related sections address equipment needs, temperature and air quality, lighting and views, cleaning/maintenance, and security issues. These questions will identify issues related to workspace design that are of concern, and areas that successfully promote work processes.

Individual Work Effectiveness allows the team to capture occupant perspectives on the degree to which the design of their personal workspace is perceived to be better or worse than their previous workspace in support of their workplace activities.

Group Work Effectiveness polls occupants' satisfaction with aspects of the shared environment. Also addressed are perceptions of whether Mission Hall is more or less effective in promoting interpersonal awareness and communication as compared to occupants' previous location. Similar to the section above, these responses provide occupant perceptions of the degree to which the layout at Mission Hall is better or worse than their previous workspace in support of their workplace activities.

Engagement allows the team to understand how occupants' perceptions may have changed regarding their attachment to and involvement with their work, the department, and university.

General Comments provide an opportunity for more open-ended responses and some summative evaluations of key issues. These are critical evaluative questions and as such summarize occupants overall satisfaction with the workspace and their perceptions of support for work effectiveness.

Overall, significant dissatisfaction with characteristics of workplace may trigger minor design or organizational changes. These responses may also identify larger design inadequacies

that may require major design or organizational intervention, or may call into question the application of ABW as a workplace approach.

DESCRIPTION OF RESPONSES

A description of responses to each category of questions is presented in a series of charts. On the first chart, the mean (average) response is provided (red dot) as well as a grey bar indicating response variance (variability or the average distance of responses from the mean) for all the responses for the particular question. A larger grey bar indicates more variability from the mean.

The number of respondents who felt they were impacted more negatively, the number who thought things stayed the same, and the number of respondents who gave a more positive response.

The third chart illustrates a ratio of the number of respondents who felt things got worse to the number who thought things got better. The length of the bar indicates how many more people felt things were worse than those who thought things were better. If the number of responses indicating a feeling that things are better is greater than the number of responses indicating feelings that things are worse, the ratio would fall between zero and one. This response range is indicated by the dotted line.

The final chart indicates the proportion of respondents that felt things got worse to the total number of respondents for the question. Any length of bar beyond 50 (indicated by the dotted line) demonstrates that more than 50 percent of respondents felt things got worse.

REGRESSION ANALYSIS

In order to understand how characteristics of the workspace at Mission Hall influenced Satisfaction, Work Effectiveness, Well-Being, and Engagement, the team conducted regression analyses. For this analysis, the team used three sets of variables: control or background variables (those variables that describe different aspects of our respondent group), environmental variables, and outcome variables.

For the environmental variables the team included responses on questions of satisfaction with environmental characteristics such as sound privacy, as well as spatial layout questions such as distance to corridors or windows.

For the outcome variables, the team created an index based on responses to several related individual questions to increase the robustness of our measures.

In addition, a follow-up question is included in this graphic to provide more in-depth information into the source of respondent's dissatisfaction with either visual or auditory privacy. However, these variables were not statistically tested in the regression model.

SUMMARY

The results of the regression analysis are presented in the Relationship Diagram. See Figure 38. The Relationship Diagram illustrates each of the statistically significant relationships among these sets of variables. In the diagram, the solid black arrow indicates a positive relationship among variables; the dotted red arrow indicates a negative relationship. Otherwise colors represent other variables: background variables (green boxes), environmental variables (blue boxes), outcome variables (purple boxes), and reason for dissatisfaction (orange boxes).

For the two environmental factors that most influenced our outcome variables, dissatisfaction with visual privacy and dissatisfaction with audio privacy, the team explored respondents' perceptions of the specific environmental characteristics that contributed to respondents' negative responses.

As an example, the closer a respondent's workspace is to a focus or huddle room, the more this respondent is likely to feel dissatisfied with audio privacy. This dissatisfaction is likely affected by perceptions of the number of people talking and the number who may overhear a conversation. Dissatisfaction with audio privacy is likely to be associated with this respondents' negative evaluation of each one of our outcome variables.

SURVEY FINDINGS

Key Takeaways from the Mission Hall Occupant Survey Analysis:

- Mission Hall occupancy is characterized by varying levels of dissatisfaction. Dissatisfaction is strongest regarding self-assessment of workspace conditions for individual work and less strong regarding the assessment of workspace support for group activities.
- Survey results provide unambiguous evidence that the move to Mission Hall has been experienced and assessed in negative terms by individuals. In fact, negative responses dominate responses to questions about individual productivity, well-being, and satisfaction with the workplace.
- The number of respondents who felt their personal workspace interferes with their individual work effectiveness far exceeds those that felt it enhanced effectiveness (by a factor of more than 7). Although most respondents also thought their workspace interferes with their ability to work effectively with others, responses were somewhat less negative.
- The number of people who feel that their personal well-being got worse far exceeds the numbers that see improvement (by a factor of more than 3).
- The number of people dissatisfied with the new building overall and their individual workspace far exceeds (nearly double or more) the numbers that feel satisfied.
- However, it is also clear that the levels of dissatisfaction with group productivity are not as pronounced. The numbers of negative responses still exceed the numbers of positive responses, but by lower factors. Thus, the distinction between responses to individual level variables and responses to variables referring to group work is a matter of lesser dissatisfaction.
- The number of people that see group productivity worsening at Mission Hall is slightly higher than the number that see improvement. Those that see no change are sometimes the largest group.

- People continue to feel engaged with UCSF after moving to Mission Hall, even though for most aspects of engagement the number of people feeling engaged has gone down. Dissatisfaction is more pronounced regarding feeling valued by UCSF.
- Dissatisfaction regarding communications in the office, or feelings of connectedness, is not as pronounced. The ease of interaction with co-workers showed slightly more positive evaluations, while feeling connected to people in the workplace was evaluated as slightly worse.
- The move to Mission Hall is associated with some satisfaction with support spaces. This is the only issue about which the number of positive responses exceeds the number of negative responses, particularly relative to Conference Rooms and Huddle Rooms.

Against the above background the team looked more closely at the evaluation of the work environment.

- Visual privacy, noise, and sound privacy elicit the greatest amount of dissatisfaction, with negative responses to sound privacy exceeding positive ones by a factor of more than 20. On the other hand some level of satisfaction is asserted regarding the provision of equipment at the workplace.

Given the level of dissatisfaction, the team then asked whether the responses to the survey provide any evidence about the specific factors of environment that are responsible for negative outcomes.

- The perceived lack of visual privacy and the perceived lack of sound privacy are significantly correlated with feeling that individual productivity and work effectiveness were worse at Mission Hall than at the previous workplace.
- Results show that an increase in visual and auditory privacy is expected to positively influence individuals' perceptions of individual work effectiveness, group work effectiveness, personal well-being, engagement, and satisfaction with individual workspace.
- Negative feelings about work effectiveness were particularly significant for Faculty (both Research and Clinical Faculty) and negative perceptions were stronger for those who have worked at UCSF longer.

- Feeling personal well-being was worse was more pronounced for those participants who have worked at UCSF longer. For Staff, perceptions of well-being were better at Mission Hall, than for other job types.
- Feelings of engagement with UCSF were strongly associated with visual and auditory privacy. Negative feelings about engagement were particularly significant for Faculty (both Research and Clinical Faculty) and negative perceptions were stronger for those who have worked at UCSF longer.

Given dissatisfaction with visual and auditory privacy, and given the effects that this seems to have on productivity, the team looked at the factors associated with these.

- The factors most often cited in relation to the perception of poor visual privacy are:
 - Density
 - The low height of partitions
 - The number of people walking by the work area
- The factors most often associated with auditory privacy are:
 - The number of people talking
 - The number of people thought to overhear one's own conversations

Given the relationship between dissatisfaction and environmental factors, namely the perception of poor visual and auditory privacy, the team asked whether specific factors regarding the location of one's workspace in the layout were associated with negative assessments of performance or environment.

- The team found evidence that proximity to main corridors worsens the assessment of visual privacy.
- The team also found that proximity to corridors or to Focus and Huddle Rooms reduced satisfaction with auditory privacy.

DESCRIPTIVE STATISTICS

To see if there were distinct differences in responses for people in different roles, the team looked at survey responses for two categories of participant job title: Faculty and Staff (including both Administrative and Research Staff).

In the review of the responses by job title, we observe that Faculty were more dissatisfied and less satisfied across all variables as compared to the results for all respondents. Although dissatisfaction is high, Staff were slightly less dissatisfied and slightly more satisfied across all variables as compared to the results for all respondents.

HOW TO READ THE FOLLOWING CHARTS



Satisfaction

Survey question category.

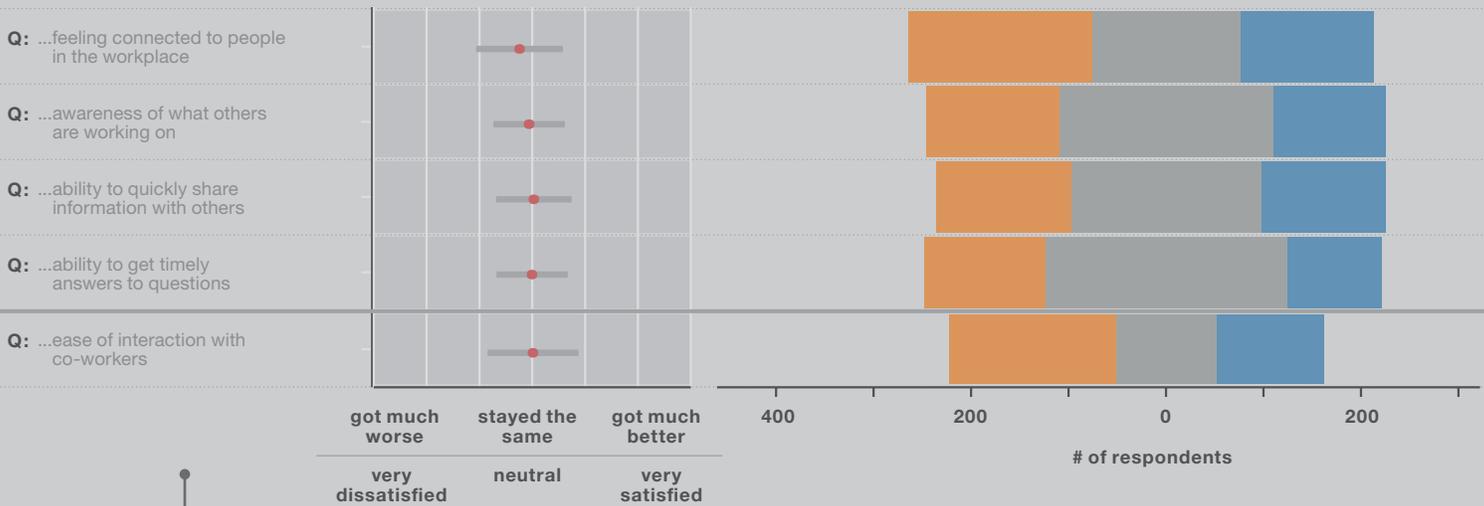
Satisfaction with Building

All things considered, how do you feel about...

Survey question opener.

MEAN AND VARIANCE OF ALL RESPONSES

GOT WORSE / STAYED SAME / GOT BETTER DISSATISFIED / NEUTRAL / SATISFIED



Continuation of survey question. The results of each question are read horizontally across the entire page.

The mean (average) response is provided (red dot) as well as a grey bar indicating response variance (variability or the average distance of responses from the mean) for all the responses for the particular question. A larger grey bar indicates more variability from the mean.

The number of respondents who felt they were impacted more negatively, the number who thought things stayed the same, and the number of respondents who gave a positive response.

Brief comparison of the charts on the page.

The number of people dissatisfied with the new building overall and their individual workspace also far exceeds (always more than double) the numbers that see improvement or no change.

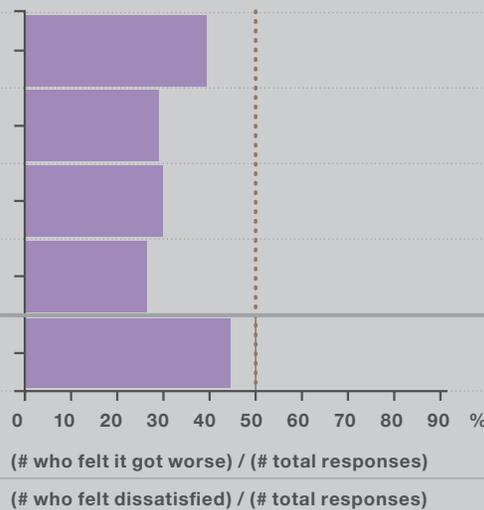
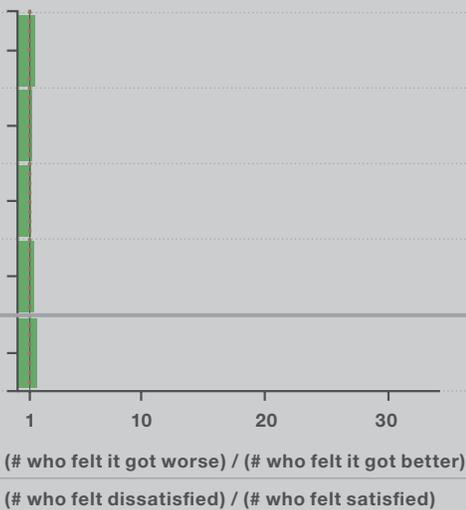
See Figure 20 and Figure 21.

Titles that correspond with all charts vertically below these titles on the entire page.

Distinguishes if the chart responses to the left are ALL respondents or FACULTY only.

**HOW MANY MORE FELT THINGS GOT WORSE?
HOW MANY MORE FELT DISSATISFIED?**

**WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?
WHAT PROPORTION OF THE TOTAL FELT DISSATISFIED?**



Solid line divides use of top or bottom horizontal-axis labels

Illustrates a ratio of the number of respondents who felt things got worse to the number who thought things got better. The length of the bar indicates how many more people felt things were worse than those who thought things were better. If the number of responses indicating a feeling that things are better is greater than the number of responses indicating feelings that things are worse, the ratio would fall between zero and one. This response range is indicated by the dotted line.

Indicates the proportion of respondents that felt things got worse to the total number of respondents for the question. Any length of bar beyond 50 (indicated by the dotted line) demonstrates that more than 50 percent of respondents felt things got worse.

ALL

✓ Satisfaction

Satisfaction with Building

All things considered, how do you feel about...

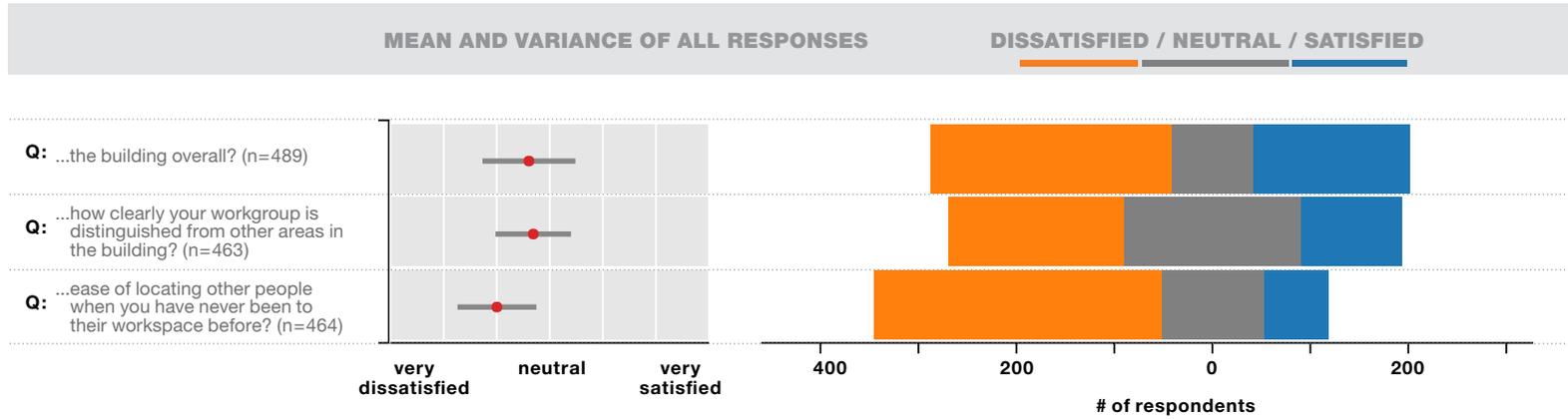


Figure 20 Survey results on Satisfaction with Building (All participants)

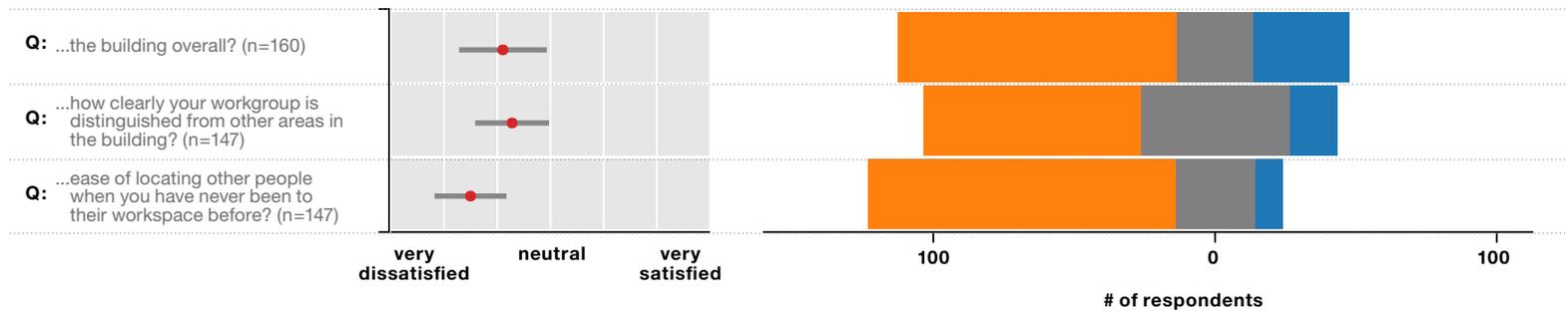


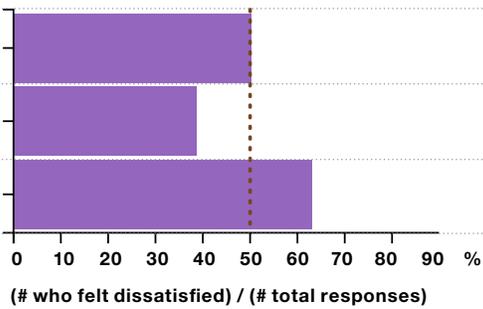
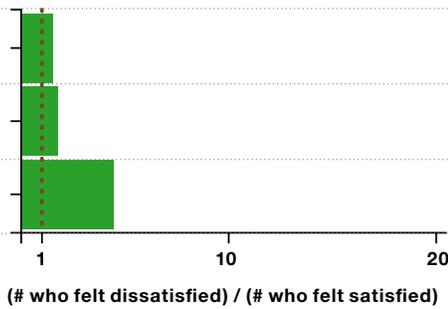
Figure 21 Survey results on Satisfaction with Building (Faculty only)

The number of people dissatisfied with the new building overall and their individual workspace far exceeds (nearly double or more) the numbers that feel satisfied.

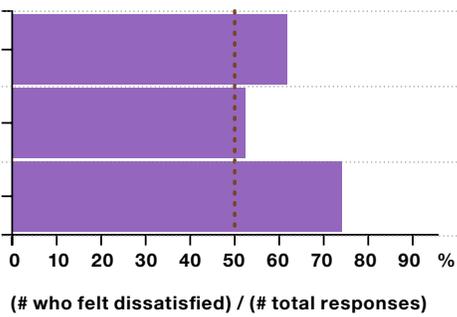
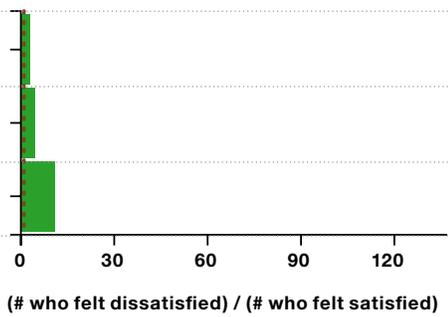
See Figure 20 and Figure 21.

HOW MANY MORE FELT DISSATISFIED?

WHAT PROPORTION OF THE TOTAL FELT DISSATISFIED?



ALL



FACULTY ONLY

Survey Results– Satisfaction, continued...

Satisfaction with Individual Workspace

Survey question: All things considered, how do you feel about...

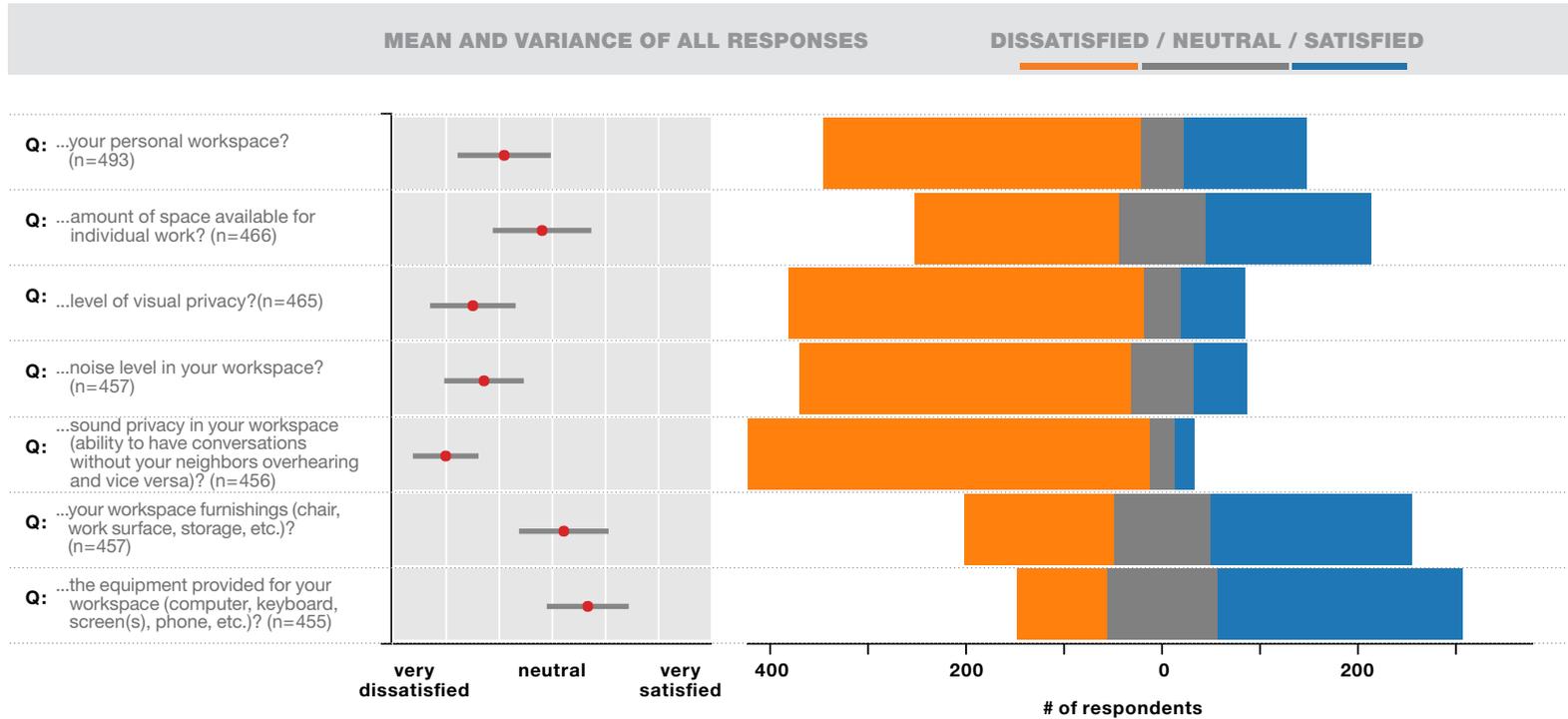


Figure 22 Survey results on Satisfaction with Individual Workspace (All participants)

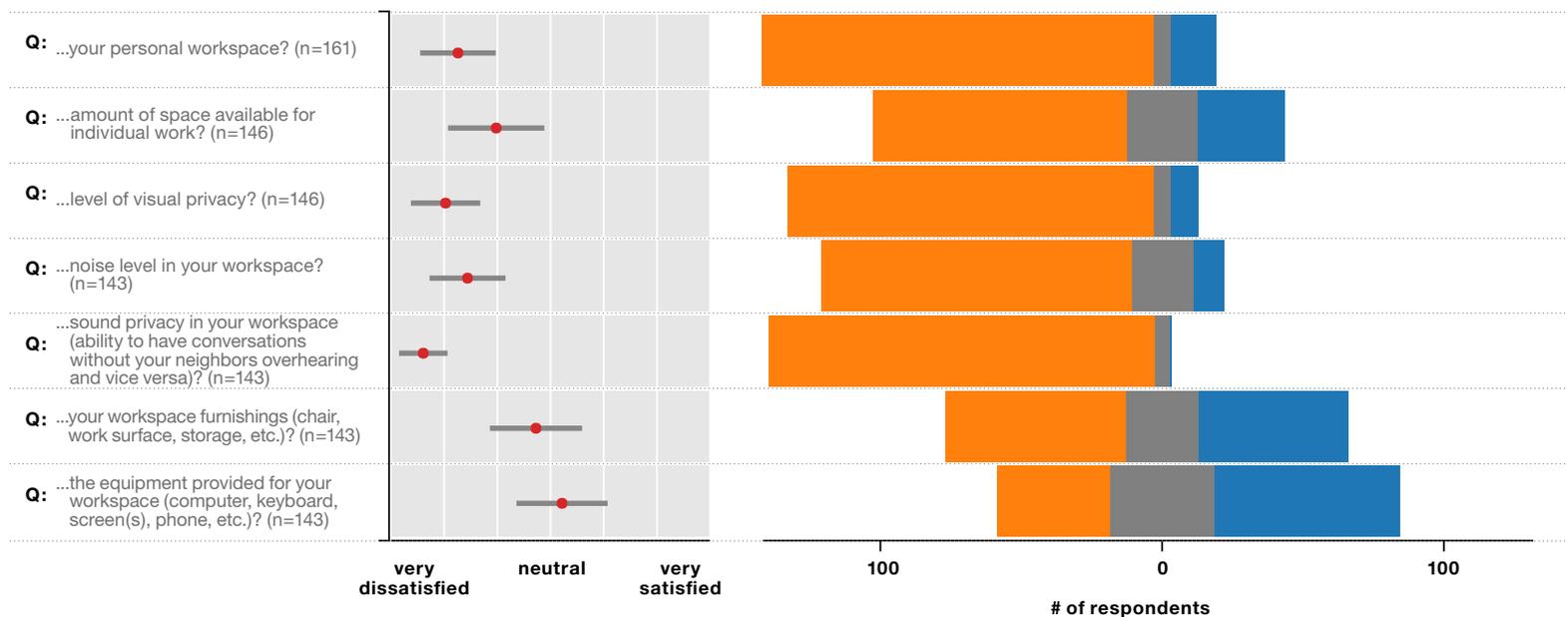


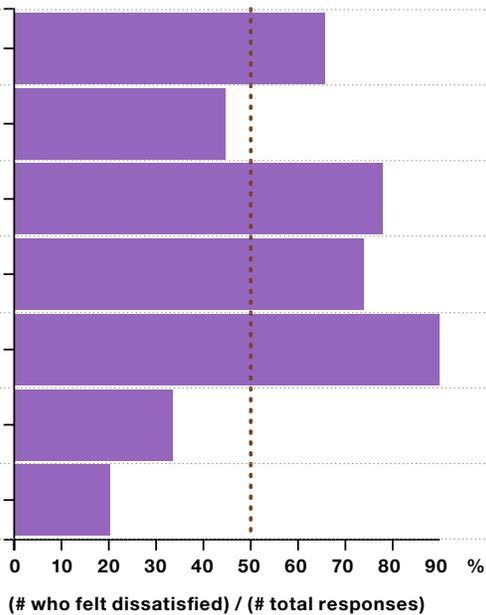
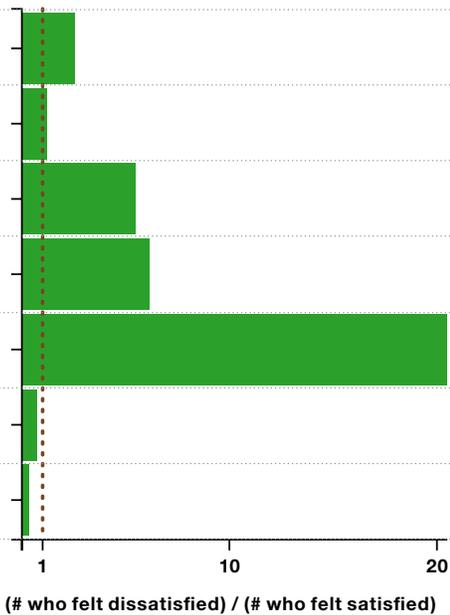
Figure 23 Survey results on Satisfaction with Individual Workspace (Faculty only)

Visual privacy, noise, and sound privacy elicit the greatest amount of dissatisfaction, with negative responses to sound privacy exceeding positive ones by a factor of more than 20. On the other hand some level of satisfaction is asserted regarding the provision of equipment at the workplace.

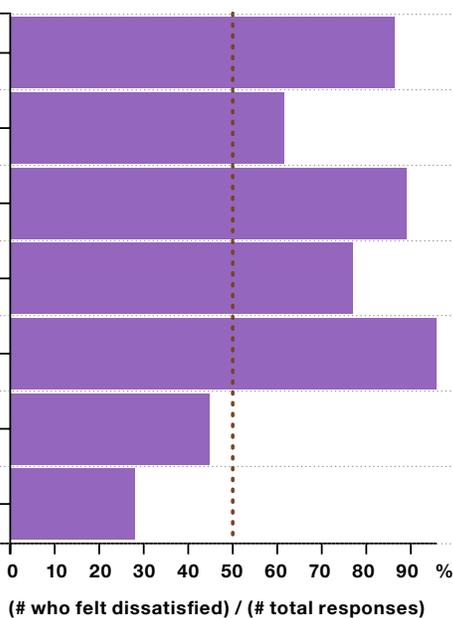
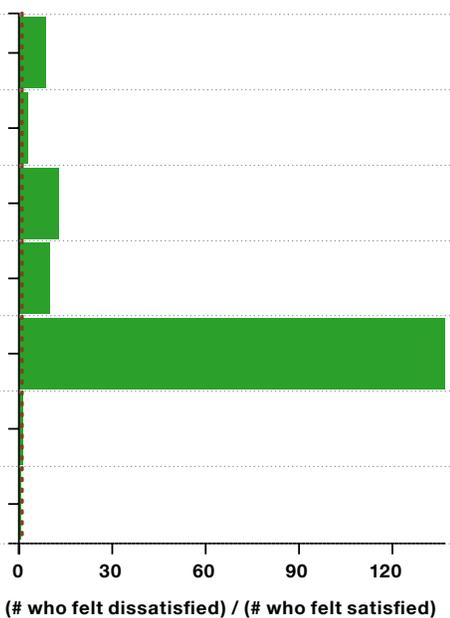
See Figure 22 and Figure 23.

HOW MANY MORE FELT DISSATISFIED?

WHAT PROPORTION OF THE TOTAL FELT DISSATISFIED?



ALL



FACULTY ONLY

Survey Results– Satisfaction, continued...

Satisfaction with Collaboration

Survey question: How has your current workplace affected...

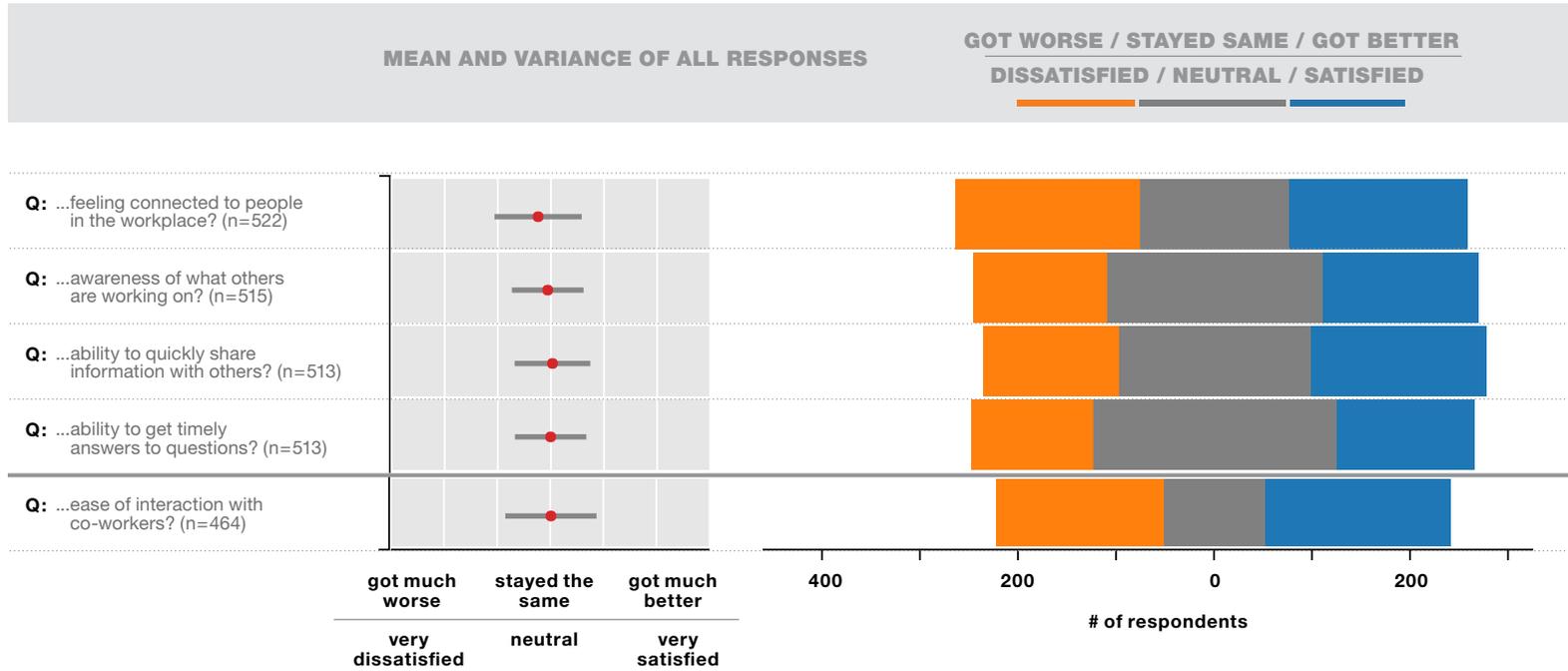


Figure 24 Survey results on Satisfaction with Collaboration (All participants)

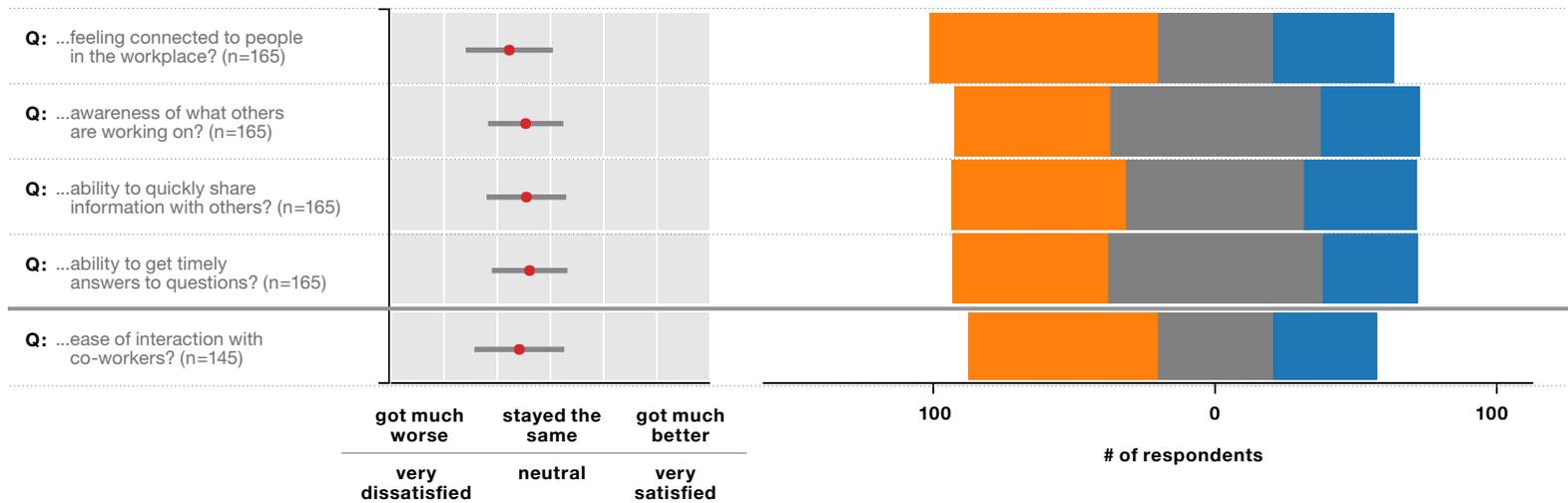


Figure 25 Survey results on Satisfaction with Collaboration (Faculty only)

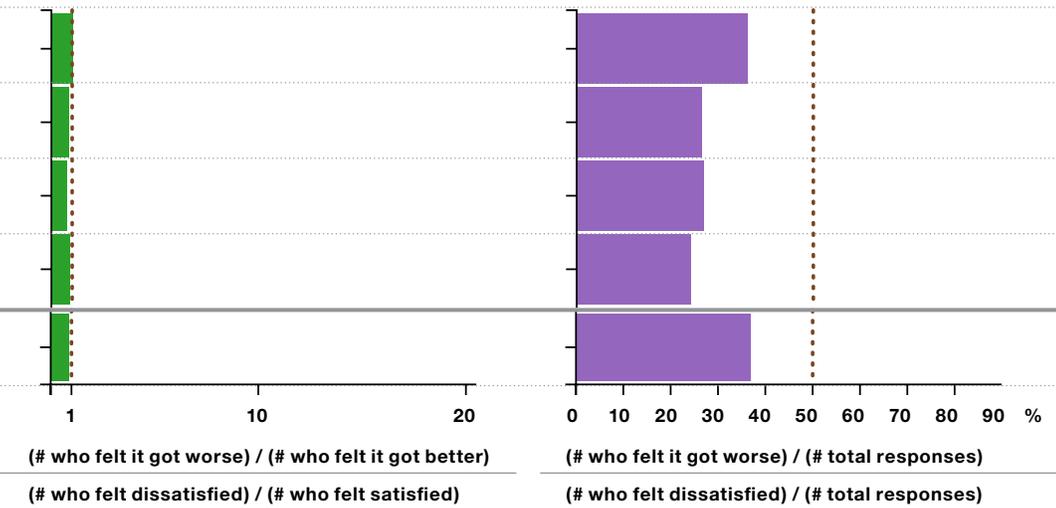
Dissatisfaction regarding communications in the office, or feelings of connectedness, are not as pronounced. The ease of interaction with co-workers showed slightly more positive evaluations, while feeling connected to people in the workplace was evaluated as slightly worse.

See Figure 24 and Figure 25.

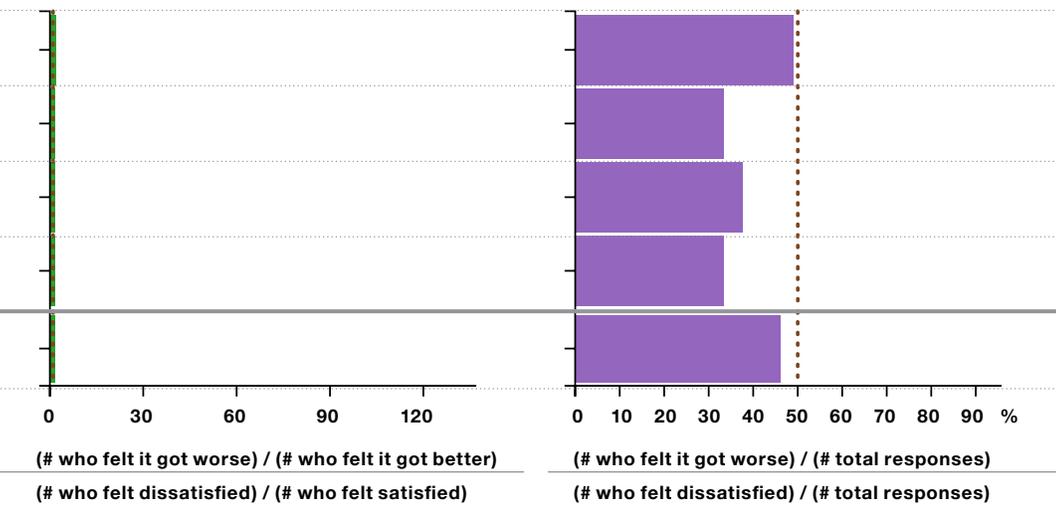
**HOW MANY MORE FELT THINGS GOT WORSE?
HOW MANY MORE FELT DISSATISFIED?**

**WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?
WHAT PROPORTION OF THE TOTAL FELT DISSATISFIED?**

ALL



FACULTY ONLY



Survey Results– Satisfaction, continued...

Satisfaction with Support Space

Survey question: How do you feel about the...

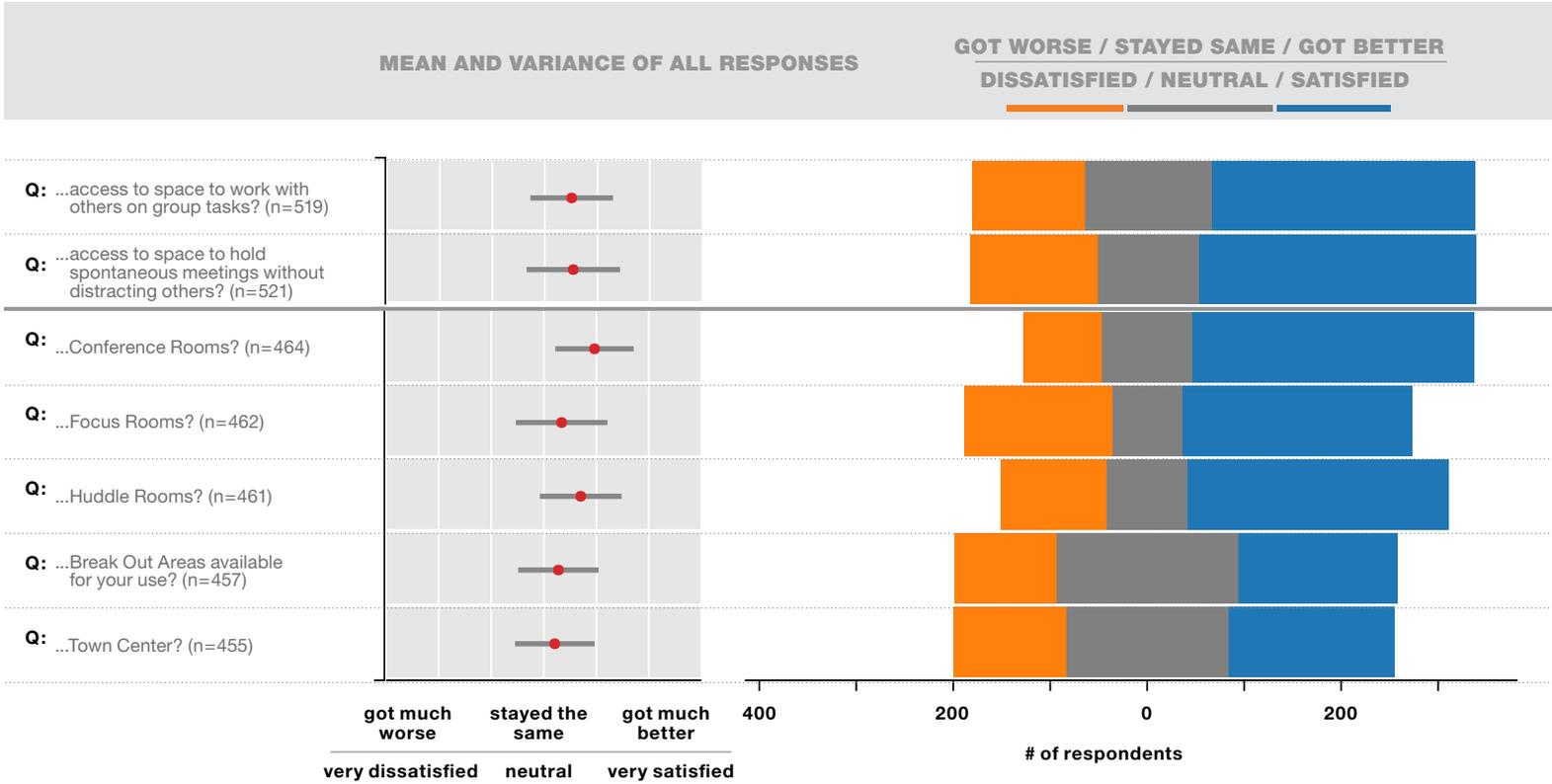


Figure 26 Survey results on Satisfaction with Support Space (All participants)

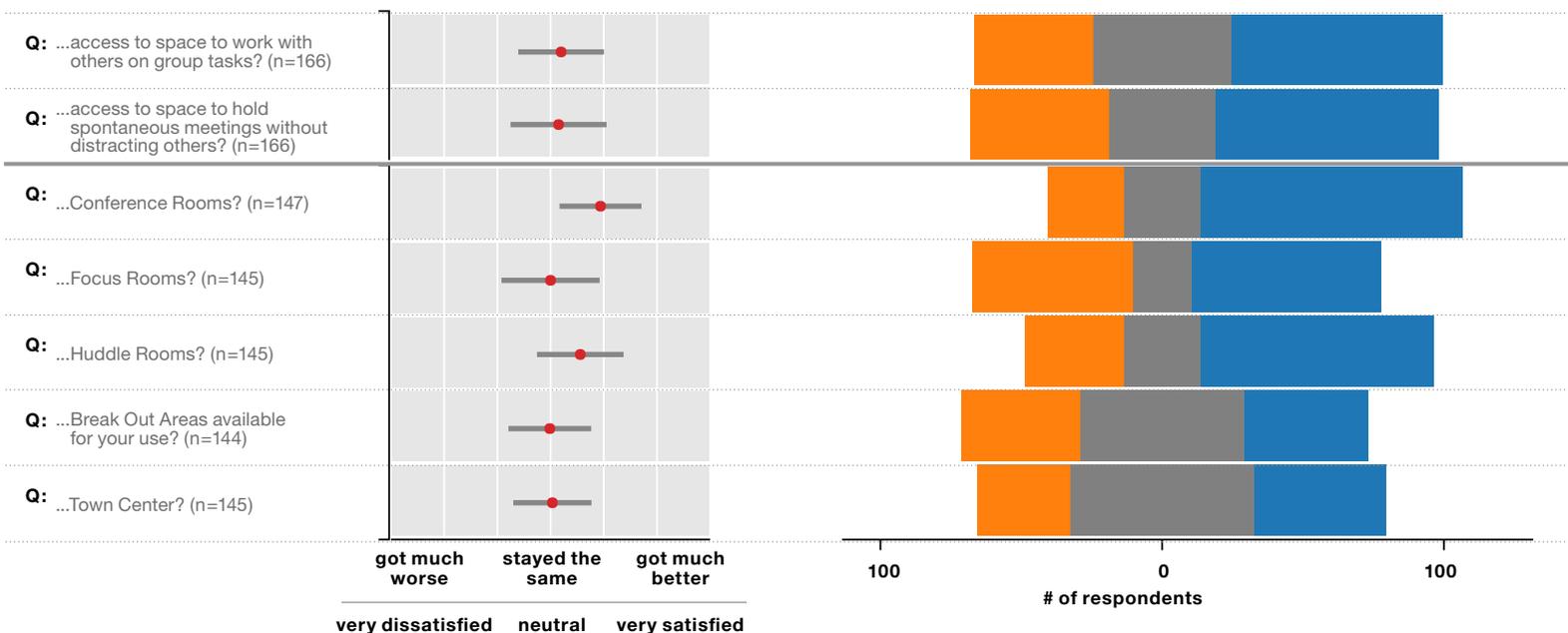


Figure 27 Survey results on Satisfaction with Support Space (Faculty only)

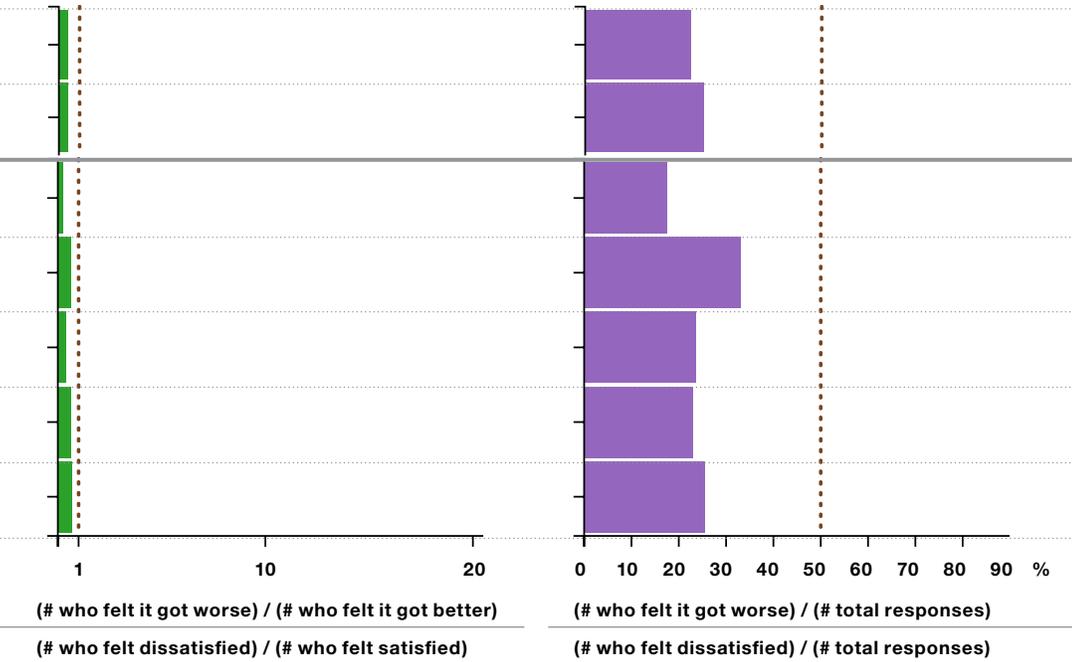
The move to Mission Hall is associated with some satisfaction with support spaces. This is the only issue about which the number of positive responses exceeds the number of negative responses, particularly relative to Conference Rooms and Huddle Rooms.

See Figure 26 and Figure 27.

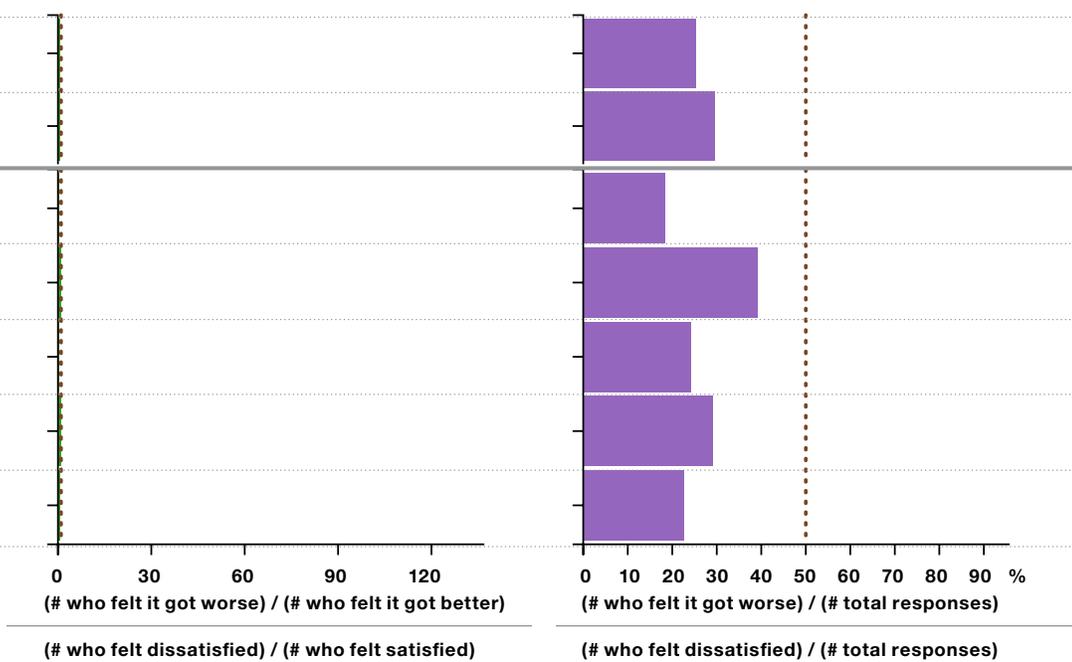
**HOW MANY MORE FELT THINGS GOT WORSE?
HOW MANY MORE FELT DISSATISFIED?**

**WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?
WHAT PROPORTION OF THE TOTAL FELT DISSATISFIED?**

ALL



FACULTY ONLY



Satisfaction with Personal Well-Being

Survey question: How has your current workplace affected...

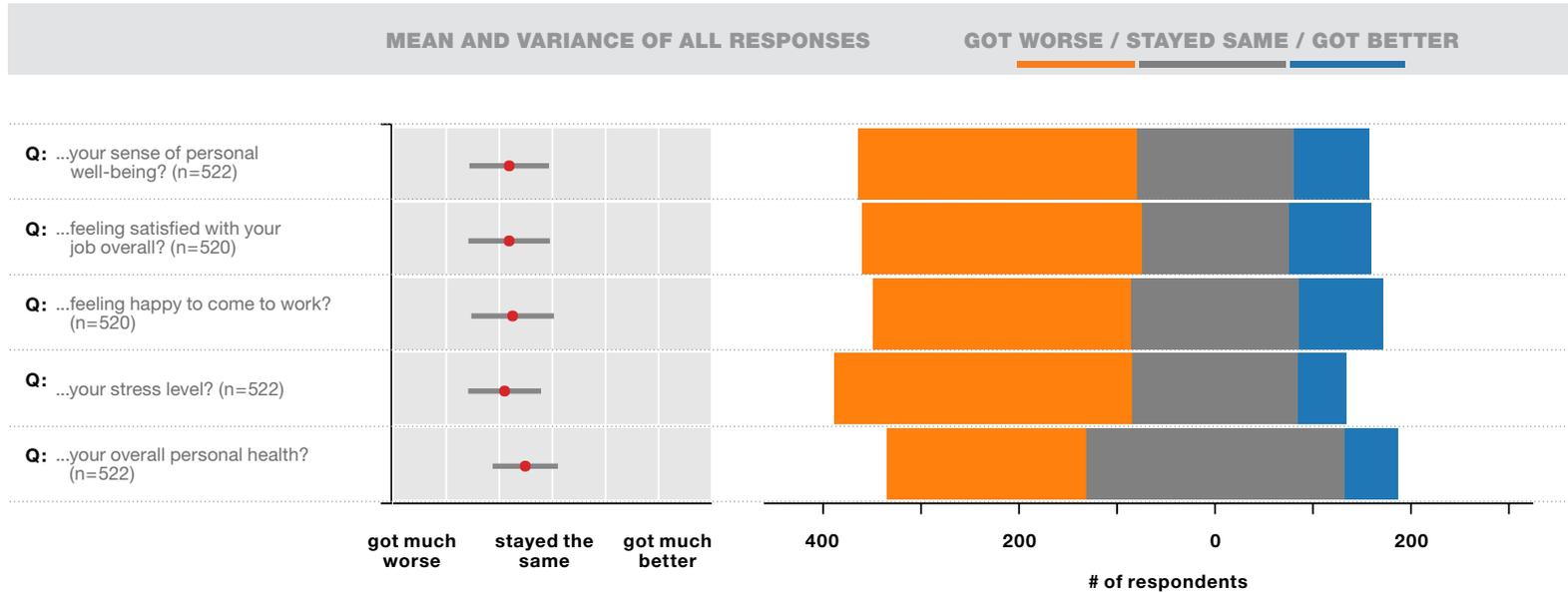


Figure 28 Survey results on Personal Well-Being (All participants)

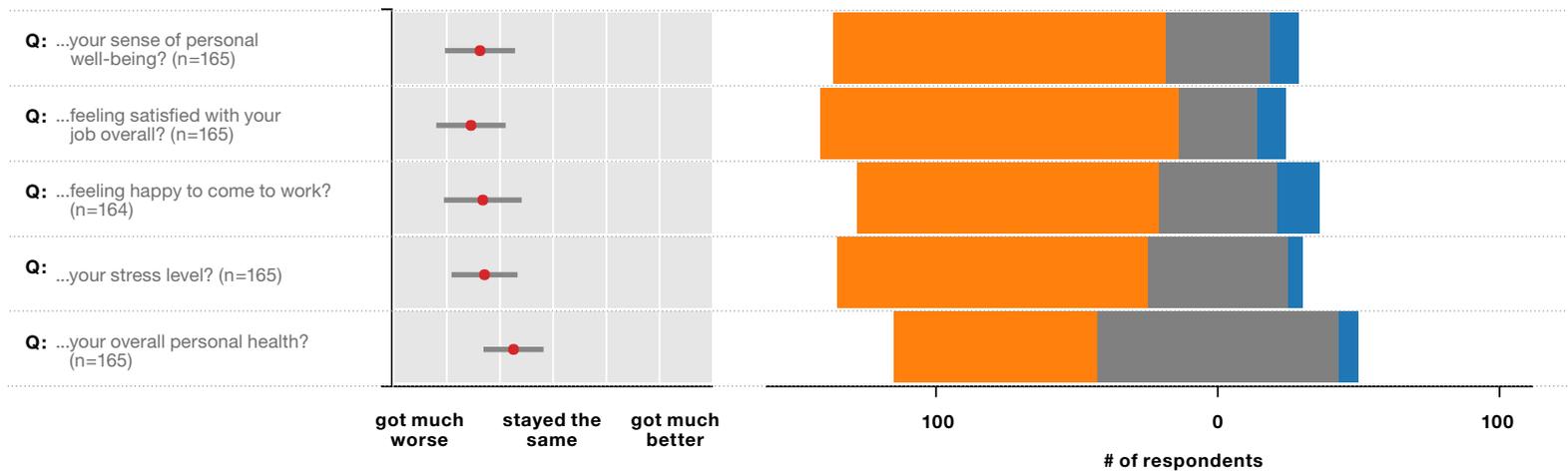
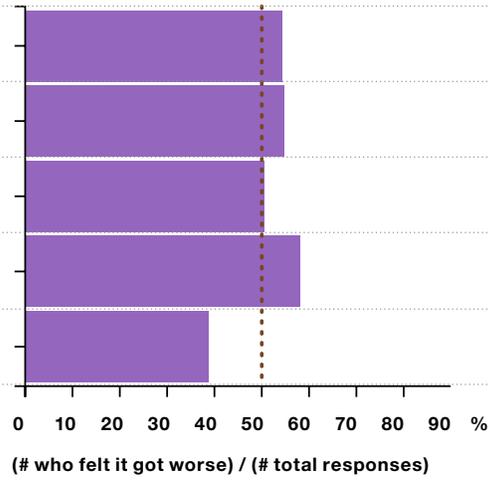
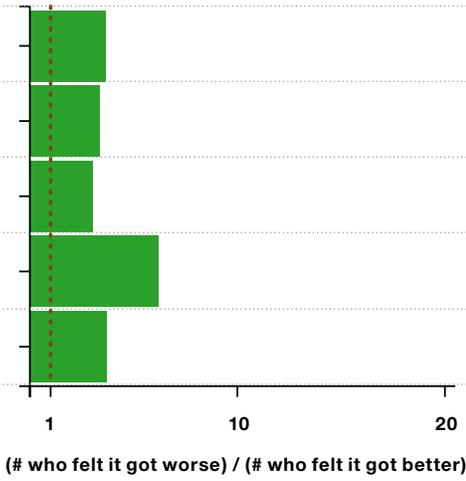


Figure 29 Survey results on Personal Well-Being (Faculty only)

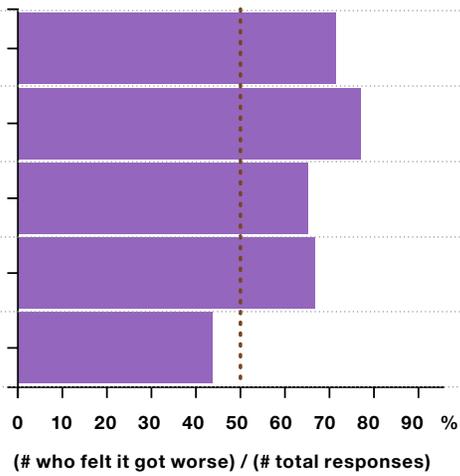
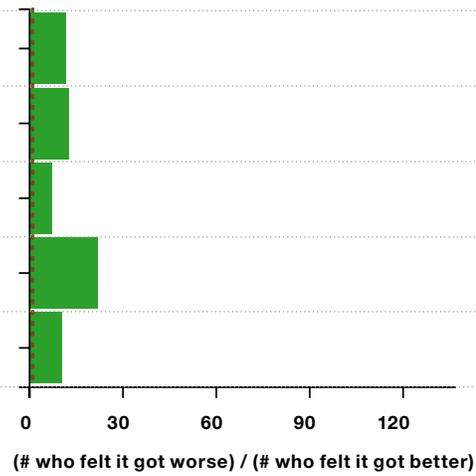
The number of people who feel that their personal well-being has decreased far exceeds the numbers that see improvement (by a factor of more than 3).

See Figure 28 and Figure 29.

HOW MANY MORE FELT THINGS GOT WORSE? WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?



ALL



FACULTY ONLY

Workspace Interfere-Enhance

Survey question: To what extent does your personal workspace enhance or interfere with your...

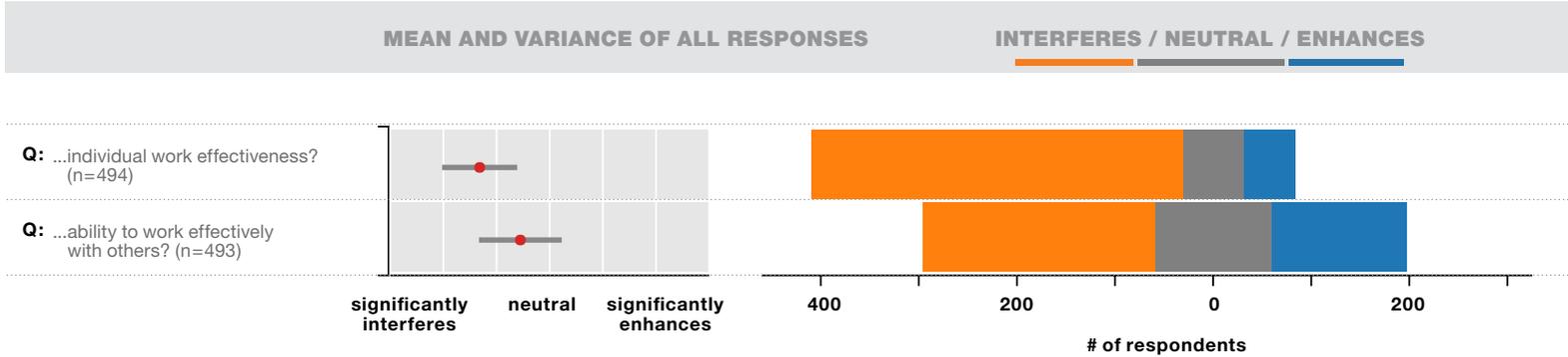


Figure 30 Survey results on Work Effectiveness (All participants)

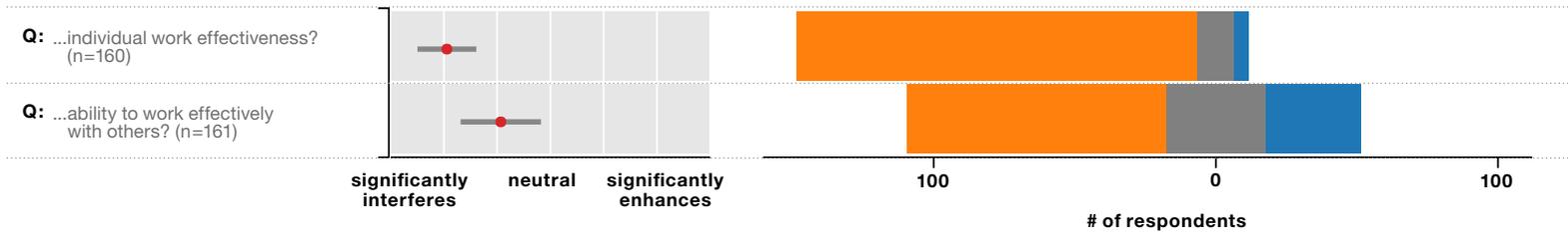


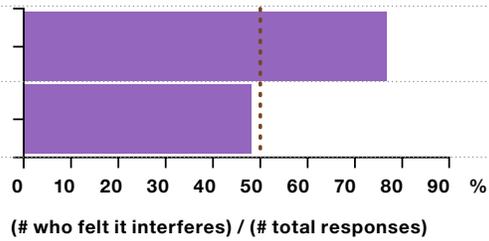
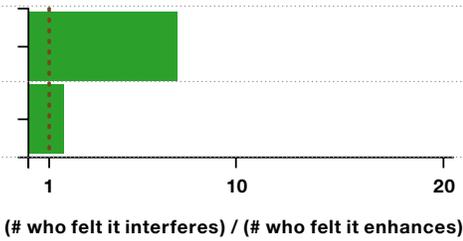
Figure 31 Survey results on Work Effectiveness (Faculty only)

The number of respondents who felt their personal workspace interferes with their individual work effectiveness far exceeds those that felt it enhanced effectiveness (by a factor of more than 7). Although most respondents also thought their workspace interferes with their ability to work effectively with others, responses were somewhat less negative.

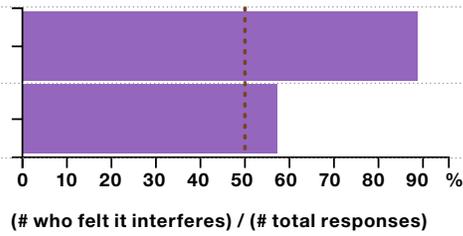
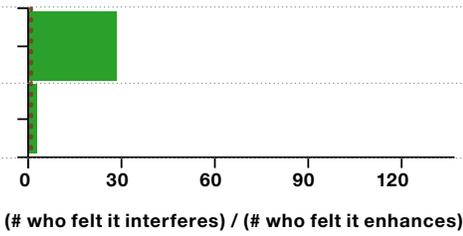
See Figure 30 and Figure 31.

HOW MANY MORE FELT THIS INTERFERES?

WHAT PROPORTION OF THE TOTAL FELT THIS INTERFERES?



ALL



FACULTY ONLY

Survey Results– Work Effectiveness, continued...

Work Effectiveness – Individual

Survey question: How has your current workplace affected your...

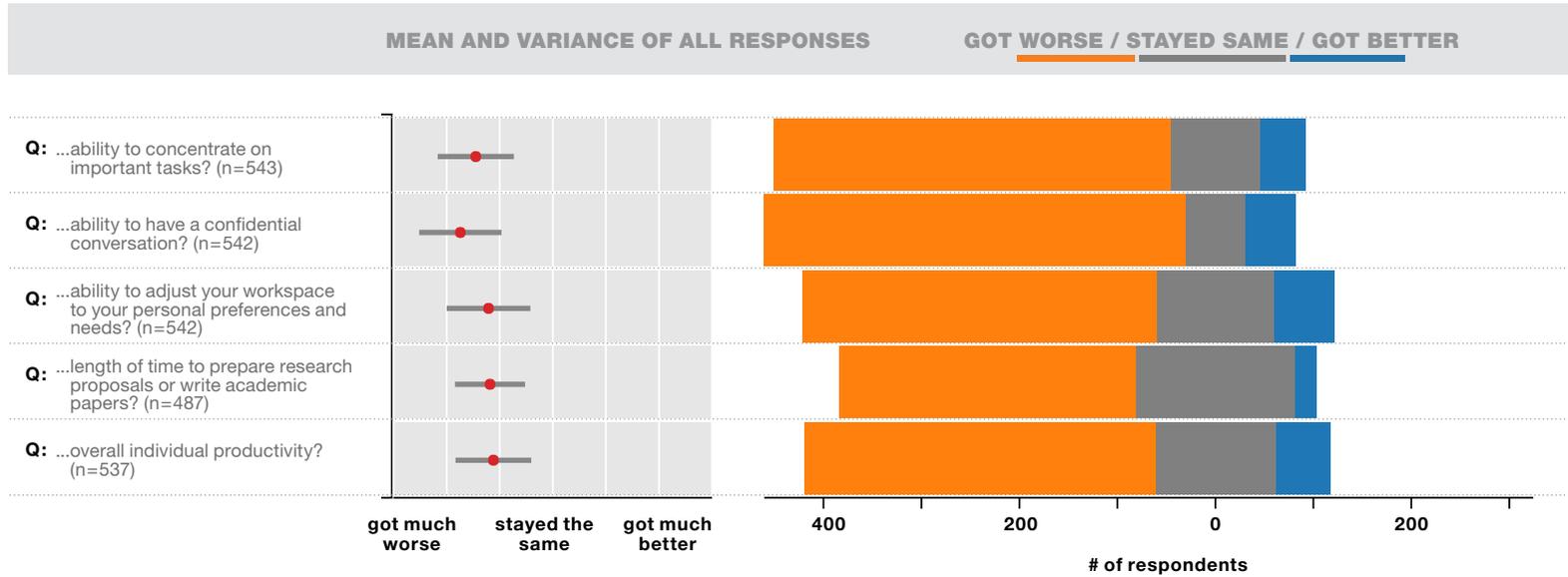


Figure 32 Survey results on Work Effectiveness – Individual (All participants)

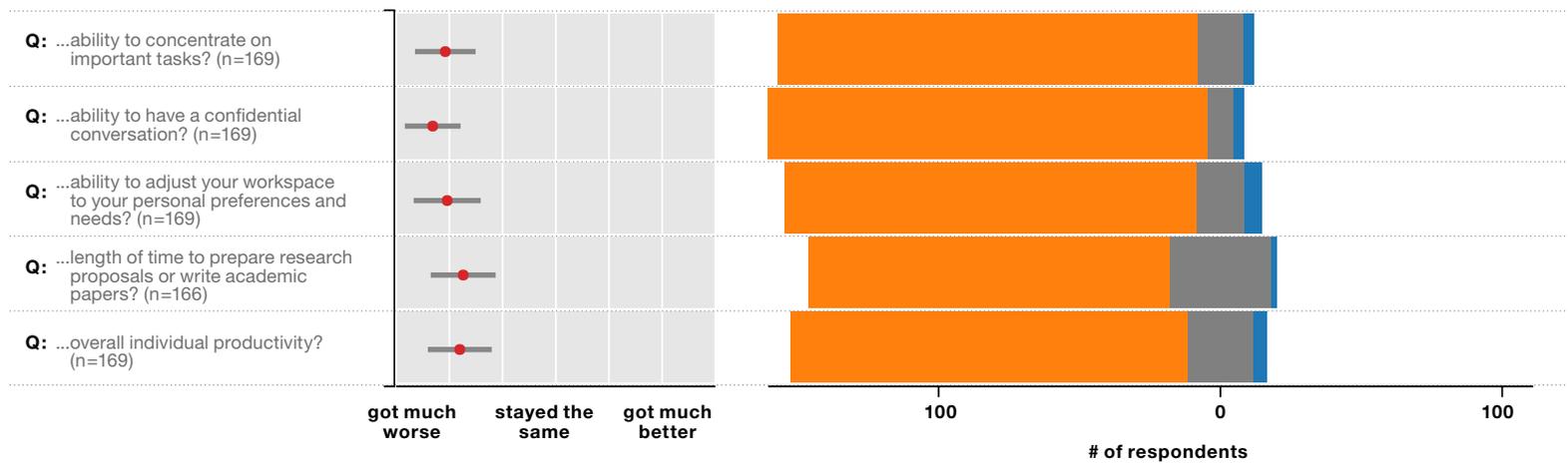


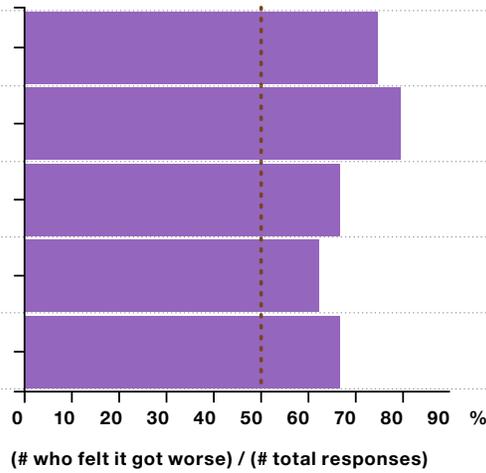
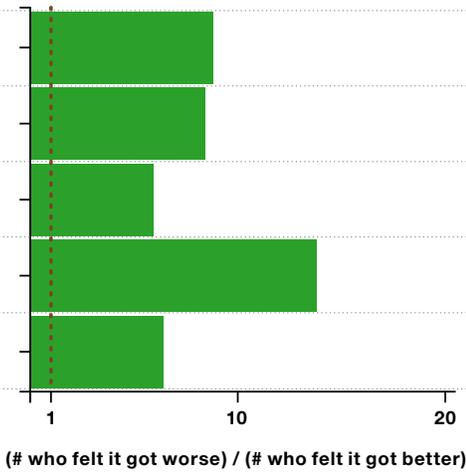
Figure 33 Survey results on Work Effectiveness – Individual (Faculty only)

The number of people that think their individual work effectiveness is worse after moving to Mission Hall far exceeds the numbers of people who see improvement.

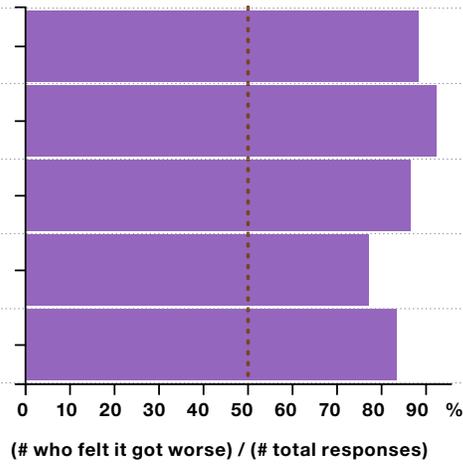
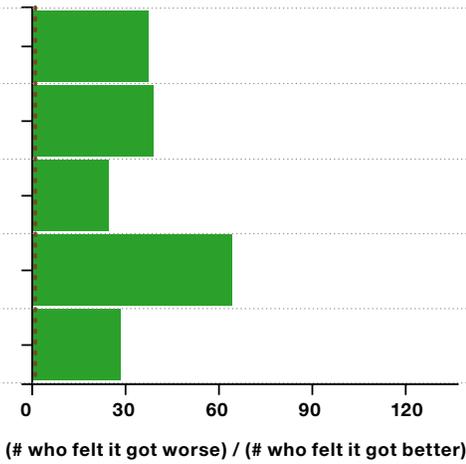
See Figure 32 and Figure 33.

HOW MANY MORE FELT THINGS GOT WORSE?

WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?



ALL



FACULTY ONLY

Survey Results– Work Effectiveness, continued...

Work Effectiveness – Group

Survey question: How has your current workplace affected your...

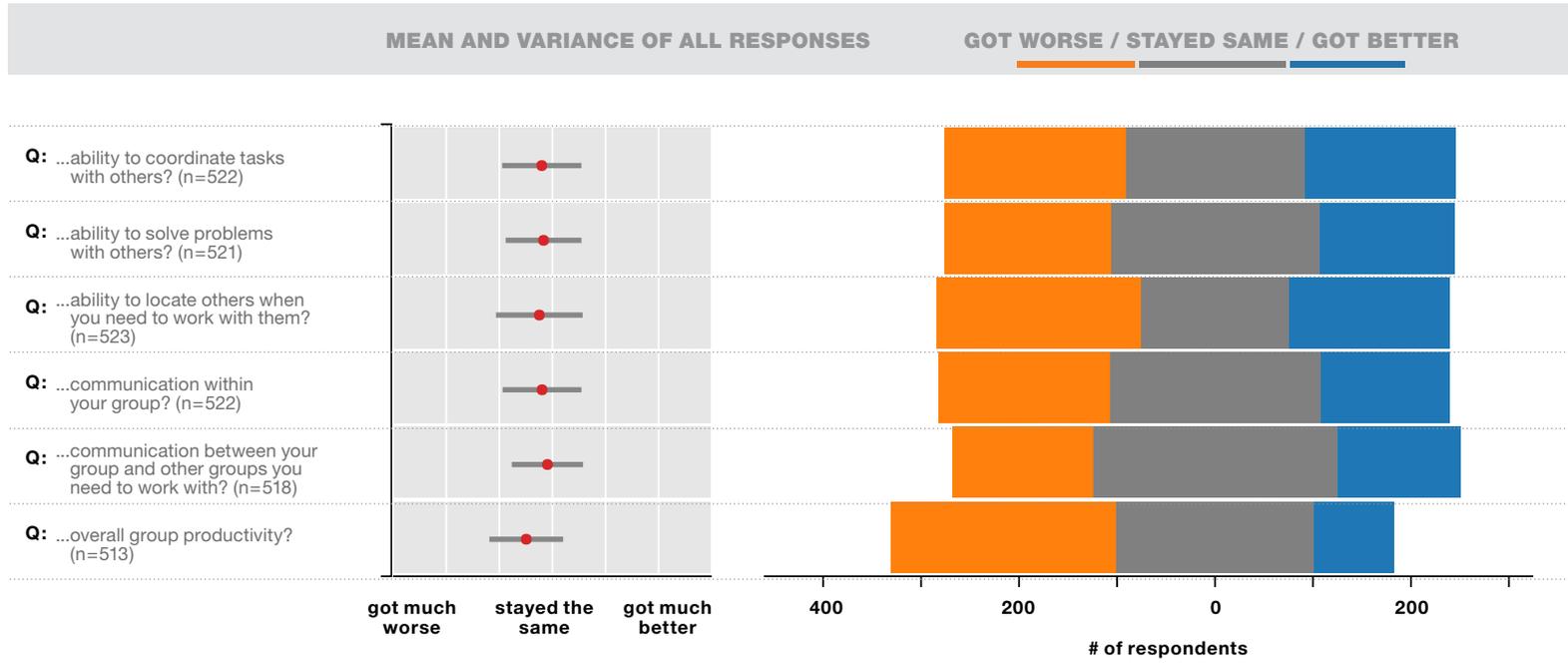


Figure 34 Survey results on Work Effectiveness – Group (All participants)

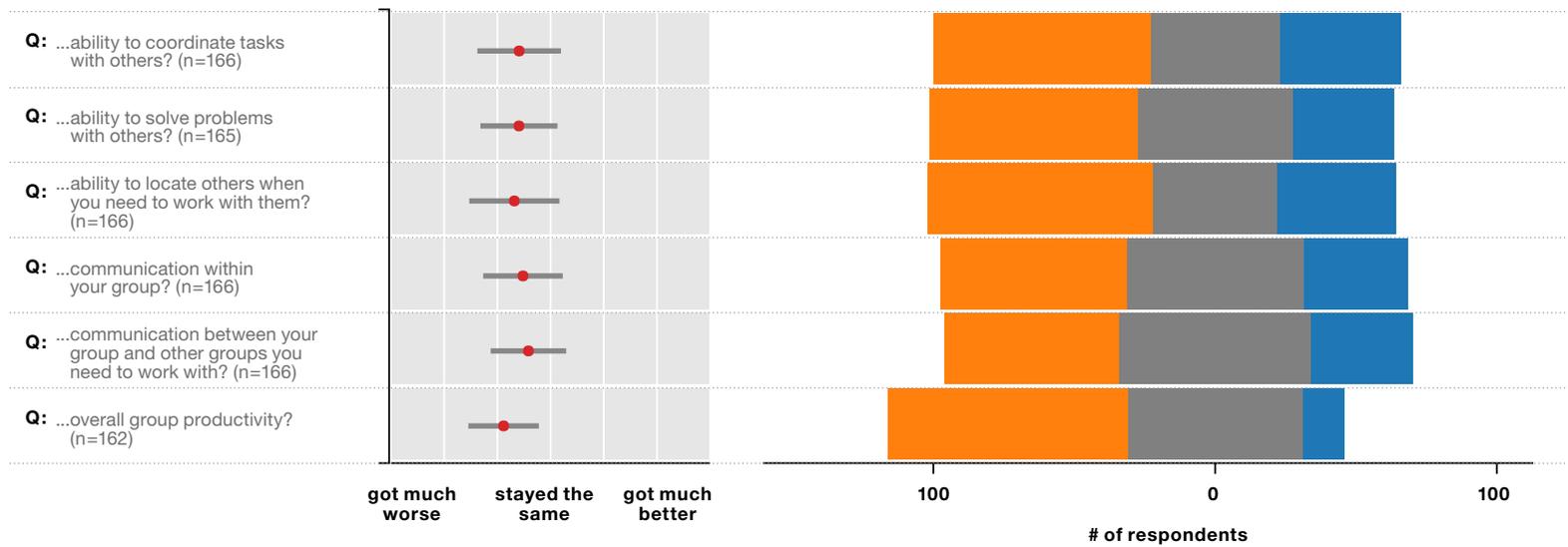


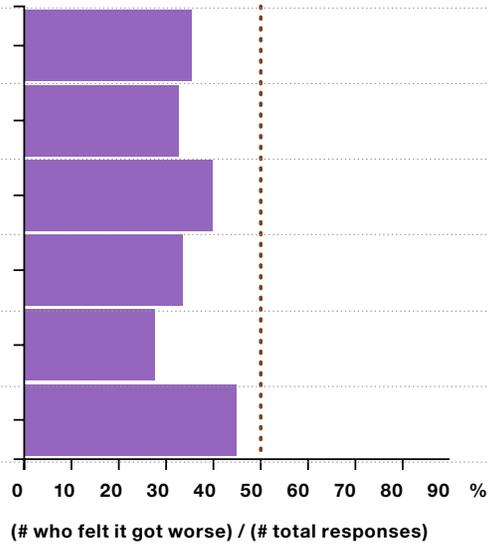
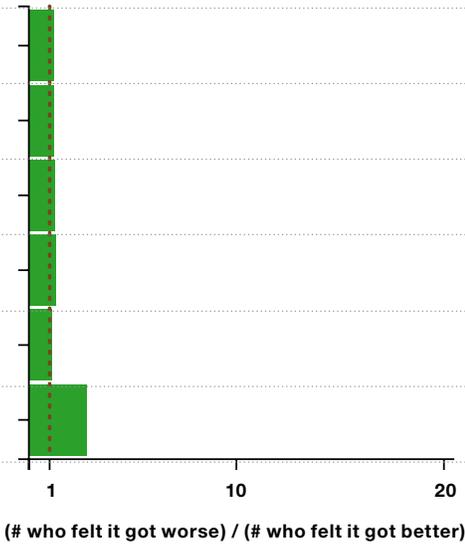
Figure 35 Survey results on Work Effectiveness – Group (Faculty only)

The number of people that see group productivity worsening at Mission Hall is slightly higher than the number that see improvement. Those that see no change are sometimes the largest group.

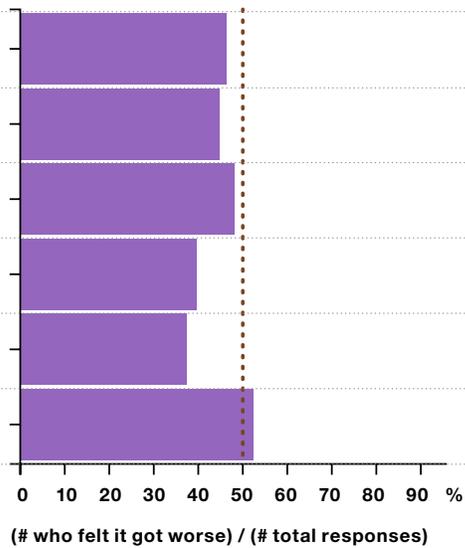
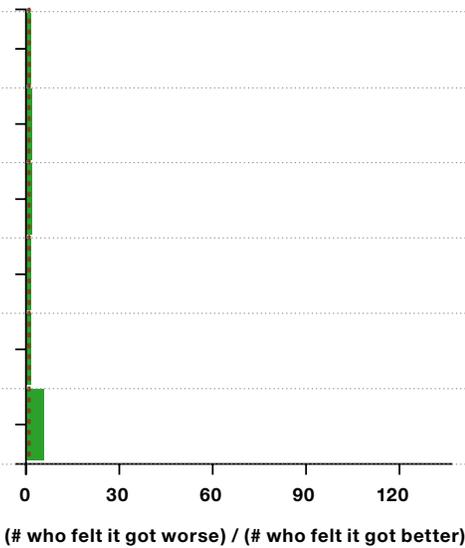
See Figure 34 and Figure 35.

HOW MANY MORE FELT THINGS GOT WORSE?

WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?



ALL



FACULTY ONLY

Engagement

Survey question: How has your current workplace affected each of the issues below?

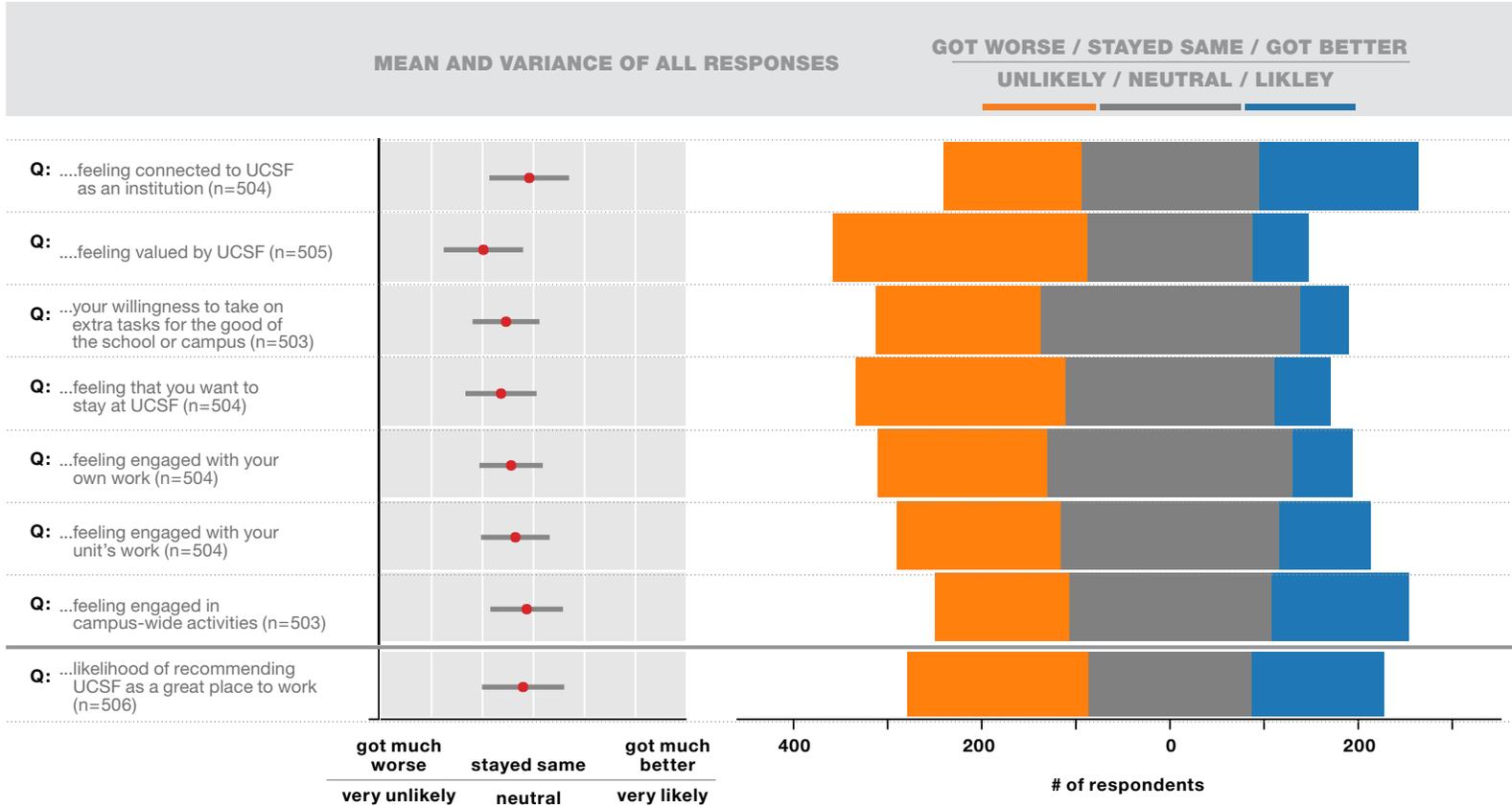


Figure 36 Survey results on Engagement (All participants)

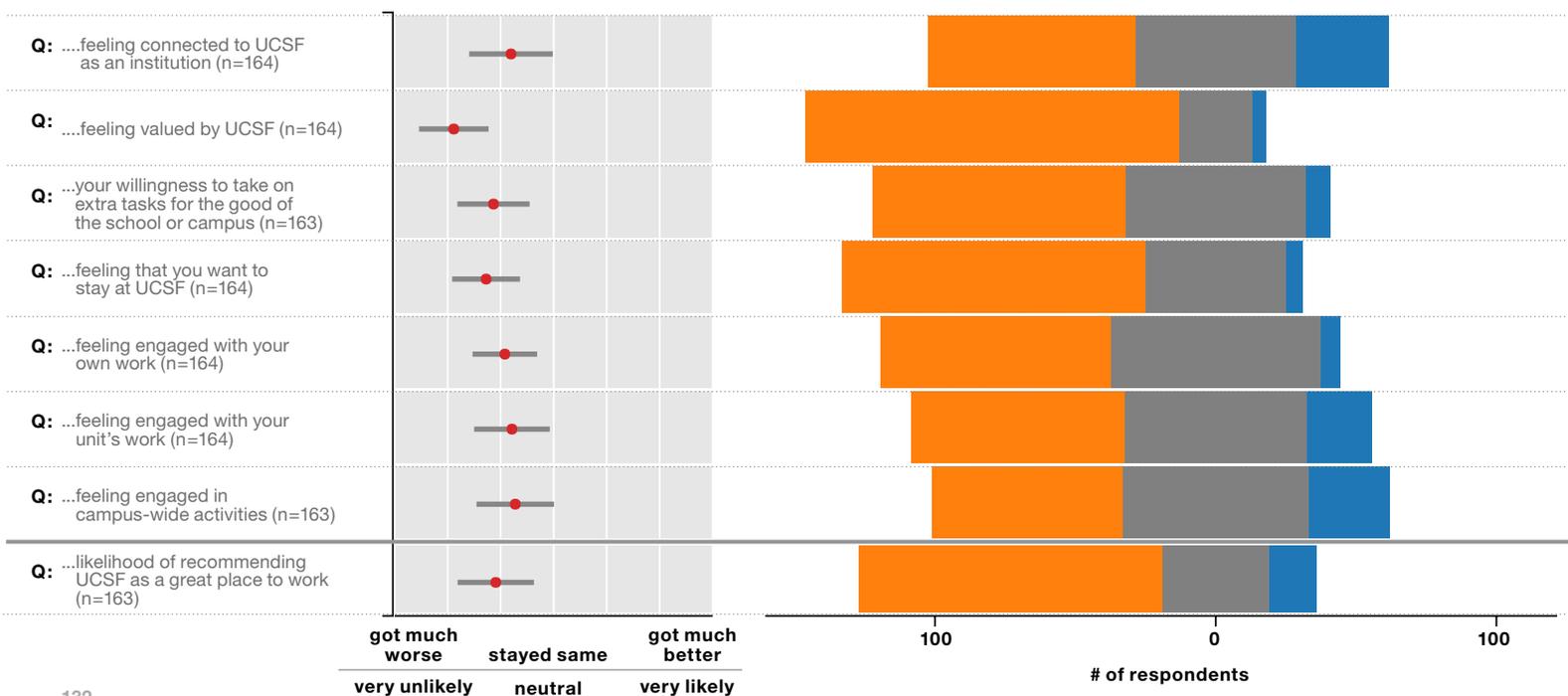


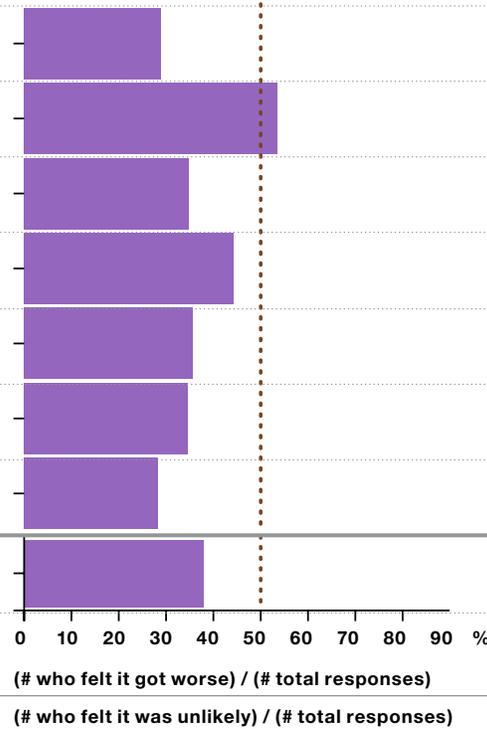
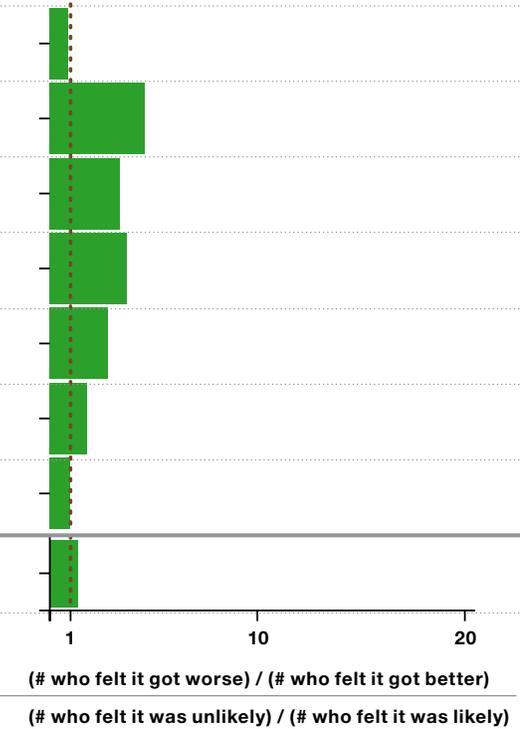
Figure 37 Survey results on Engagement (Faculty only)

People continue to feel engaged with UCSF after moving to Mission Hall, even though for most aspects of engagement the number of people feeling engagement got worse exceeds those feeling it got better. Dissatisfaction is more pronounced regarding feeling valued by UCSF.

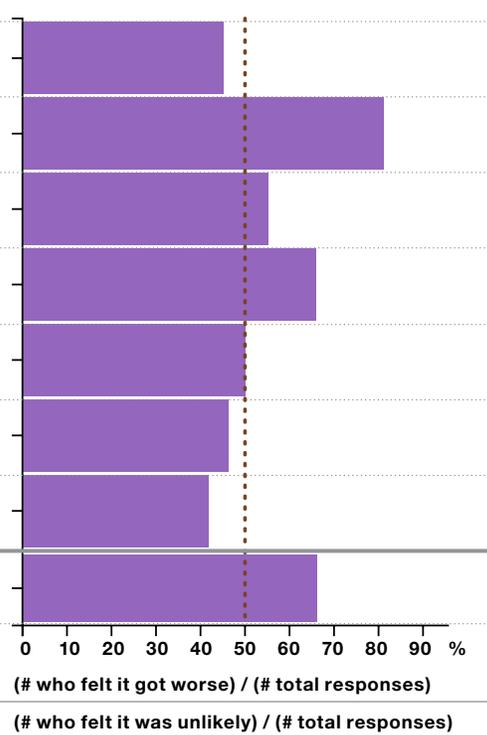
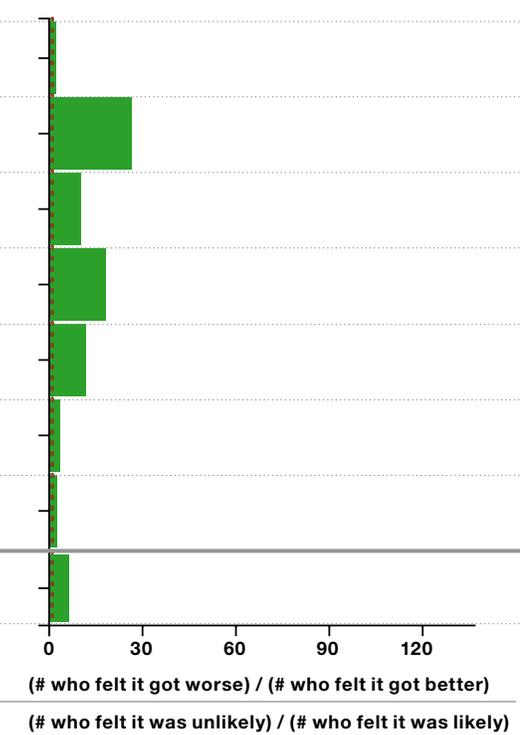
See Figure 36 and Figure 37.

**HOW MANY MORE FELT THINGS GOT WORSE?
HOW MANY MORE FELT THIS WAS LIKELY?**

**WHAT PROPORTION OF THE TOTAL FELT THINGS GOT WORSE?
WHAT PROPORTION OF THE TOTAL FELT THIS WAS UNLIKELY?**



ALL



FACULTY ONLY

Survey Results, continued...

RELATIONSHIP DIAGRAM

Given the level of dissatisfaction, the team asked whether the responses to the survey provide any evidence about the specific factors of environment that are responsible for negative outcomes.

The perceived extent of visual and sound privacy are significantly correlated with the feeling that individual productivity and work effectiveness were worse at Mission Hall than at the previous workplace. Results show that an increase in visual and auditory privacy is expected to positively influence individuals' perceptions of individual work effectiveness, group work effectiveness, personal well-being, engagement, and satisfaction with individual workspace. Negative feelings about work effectiveness were particularly significant for Faculty (both Research and Clinical Faculty) and negative perceptions were stronger for those who have worked at UCSF longer.

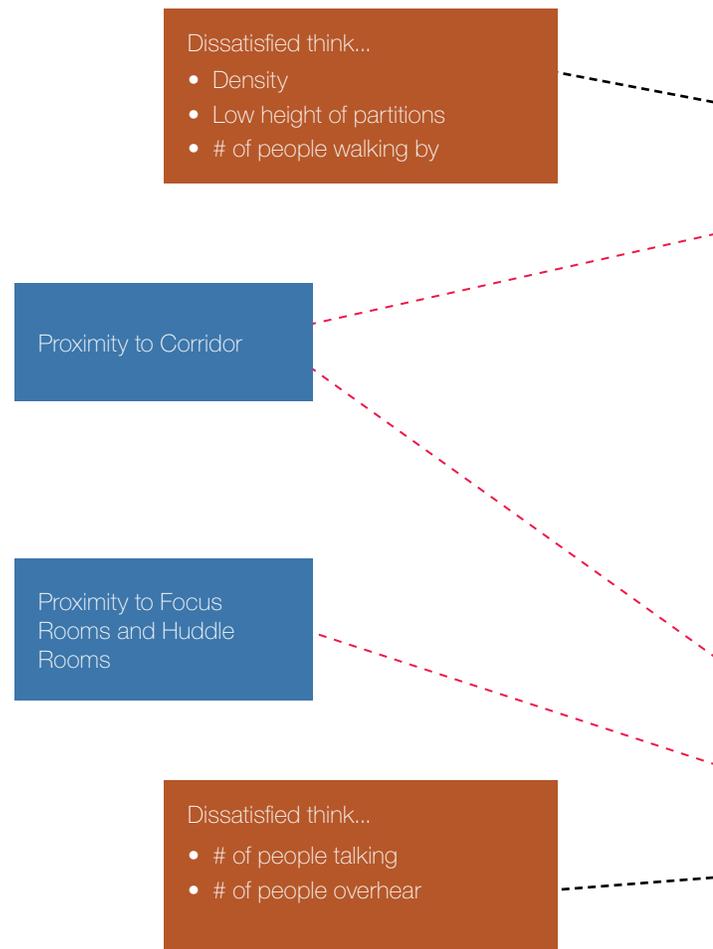
Perceptions of personal well-being were lower for those respondents who have worked at UCSF longer. For Staff, perceptions of well-being were better at Mission Hall, than for other job types.

Feelings of engagement with UCSF were strongly associated with visual and auditory privacy. Negative feelings about engagement were particularly significant for Faculty (both Research and Clinical Faculty) and negative perceptions were stronger for those who have worked at UCSF longer.

Given dissatisfaction with visual and auditory privacy, and given the effects that this seems to have on productivity, the team looked at the factors associated with these. The factors most often cited in relation to the perception of dissatisfaction with visual privacy are: density, the low height of partitions, and the number of people walking by the work area. The factors most often associated with auditory privacy are, quite predictably, the number of people talking and the number of people thought to overhear one's own conversations.

Given the relationship between dissatisfaction and environmental factors, namely the perception of poor visual and auditory privacy, the team asked whether specific factors regarding the location of one's workspace in the layout were associated with negative assessments of performance or environment. The team found evidence that proximity to main

corridors worsens the assessment of visual and auditory privacy. The team also found that proximity to Focus Rooms and Huddle Rooms reduced satisfaction with auditory privacy.



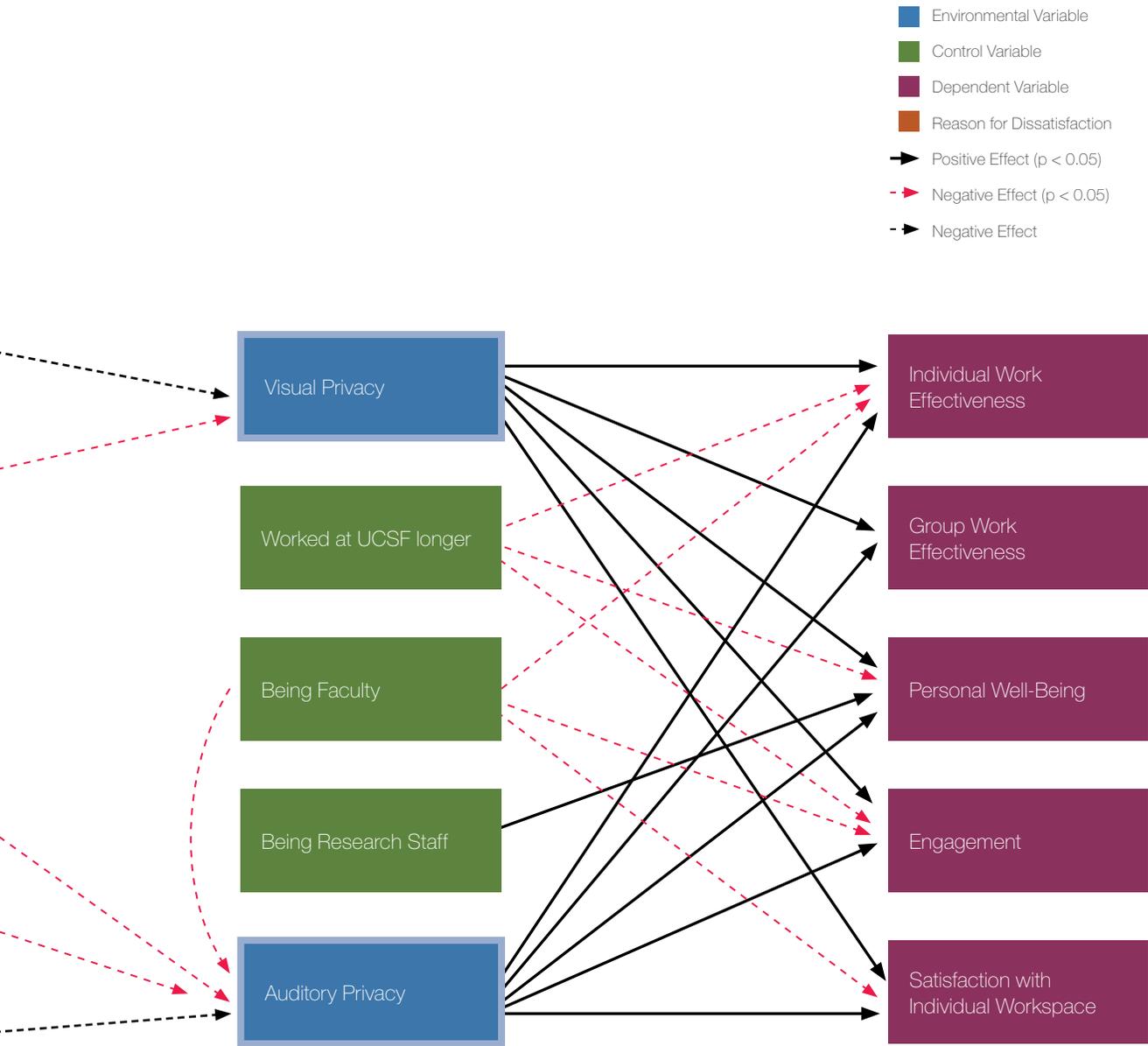


Figure 38 Relationship Diagram – How environmental factors affect perceived Satisfaction with Individual Workspace, Personal Well-Being, Individual and Group Work Effectiveness, and Engagement.

Time Utilization Study

INTRODUCTION

The team conducted time utilization studies of the Mission Hall building to establish patterns of space use. The purpose of these studies was to capture representative occupancy patterns across the building across all workdays in a typical week. These studies were then compared to the feedback collected in interviews, focus groups and surveys.

OBSERVATION PROCESS

Two time utilization studies were conducted over five days each, the initial study from Monday April 27 to Friday May 1, 2015, and the second study from Wednesday October 28 to Tuesday November 3, 2015. The area in scope for the studies included floors 1-7 of Mission Hall, in all spaces that were not assigned to classroom or general building maintenance functions.

Each survey point was observed four times per day, with the results recorded digitally as the team walked the survey area.

A total of 2,129 different spaces were observed during each observation. These included all workstations, Focus Rooms, Huddle Rooms, Conference Rooms, Breakout Areas, and Town Centers. For each space, the observers answered a number of questions related to the occupancy of the space at the time of the observation.

For workstations, the observers recorded one of the following observations:

- Occupied - focus work
- Occupied - talking (including on the phone)
- Occupied - other activities
- Non-occupied

For meeting and support spaces, the observers recorded one of the following observations:

- Occupied (and the number of people)
- Non-occupied
- Unsurveyed (for rooms that could not be accessed or seen at the time)

For circulation areas, the observers recorded one of the following observations:

- General circulation (and the number of people)
- Group gathering (and the number of people)
- Non-occupied

The study did not capture functional role differences (types of Faculty and types of Staff) in utilization patterns as existing space management programs do not assign functional roles per seat.

At the conclusion of the week of data collection, the survey data was compiled and analyzed to quantify the utilization of each space. Data was summarized by individual space, by floor, by space type, and by department. Data was analyzed in charts, tables, and “heat map” floor plans (Figure 39) showing areas of high and low activity. In the heat maps, each space is colored based on the number of times it was observed to be occupied during the week. Note color range in legend in Figure 39.



Figure 39 Example Heat Map Floor Plan showing areas of high and low occupancy*

*Heat map provides a graphic representation of quantitative analysis.

OCCUPANCY VS. RESOURCE UTILIZATION

Assessing the use patterns of Mission Hall required two different lenses: Occupancy and Resource Utilization.

Occupancy refers to the total number of people occupying the building at any given time. This is a count of number of people observed as compared to the number of people assigned to the building. Comparatively, Resource Utilization refers to the use of the various spaces provided in the building.

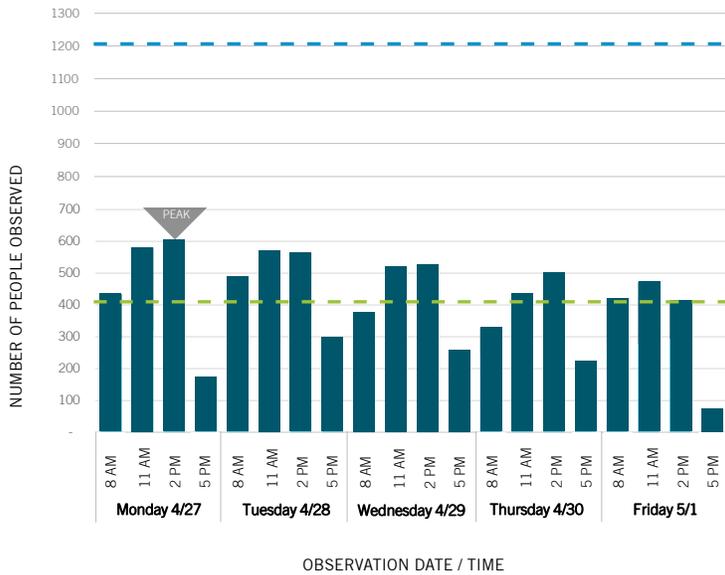
OCCUPANCY PATTERNS

Total Building Occupancy

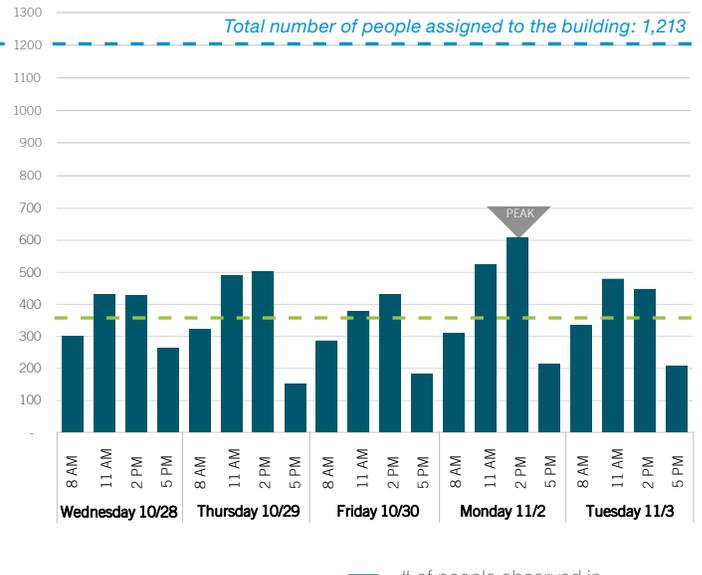
For Mission Hall, 1213 people were assigned to the building at the time of the study. Average and peak numbers of people observed were 414 (34% average) and 604 (50% peak) in April/May of 2015 and 366 (30% average) and 558 (46% peak) in October/November of 2015. Comparatively the survey response suggested 64% occupancy. See Figure 40.

Disclaimer: There is no way to identify whether the people observed were the same as the people assigned to be in the building.

APR/MAY



OCT/NOV



- # of people observed in the building
- Peak number of people observed in the building
- Total number of people assigned to the building
- Average number of people observed in the building

Figure 40 Total population observed in the building by date and time

RESOURCE UTILIZATION

As Mission Hall was based on the premise of Activity-Based Workplace, or an environment in which multiple workspaces were to be provided to support the variety of activities conducted during the workday, Resource Utilization included Workstations, Conference Rooms, Huddle and Focus Rooms, etc.

Across all spaces in Mission Hall, the team collected data on use. Figure 41 and Figure 42 show the distribution of space use across the weeks of the study. Figure 43 and Figure 45 show the percentage of use of each space on average and at peak for the entire time utilization study.

APR/MAY

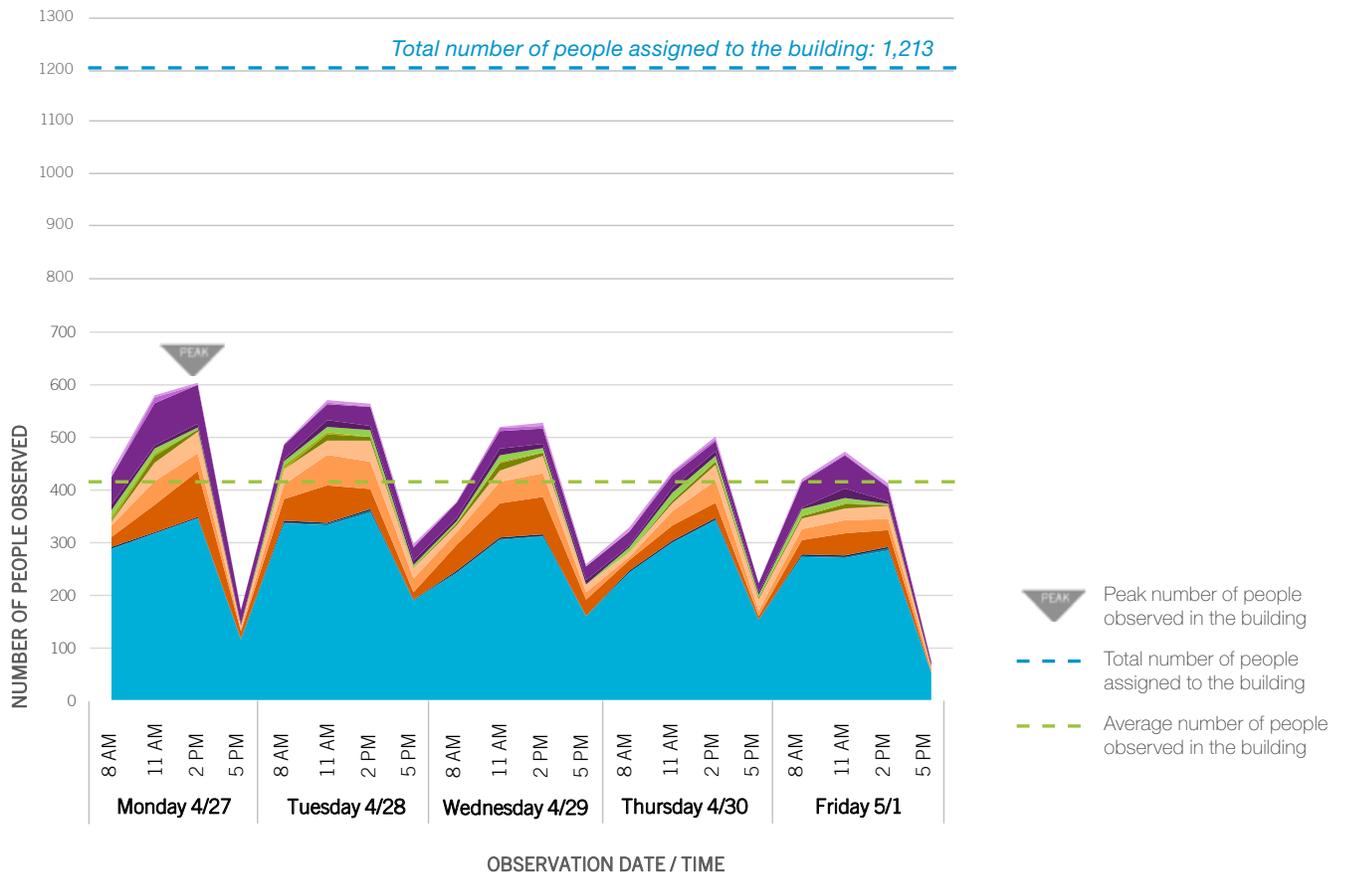


Figure 41 Total building occupancy by space types in the April/May study

SPACE TYPE	TOTAL # OF SURVEY POINTS	SPACE TYPE	TOTAL # OF SURVEY POINTS
 Workstation	1446	 Dining Seating*	8
 Touchdown (Hotel)	50	 Pantry*	8
 Reception Desk	5	 Reception Seating	23
 Meeting/Conference	39	 Circulation	22
 Focus Room	378	 Outside Seating	3
 Huddle Room	75	 Service Support Area	15
 Breakout Area	57		

*Town Center included Dining Seating and Pantry.

OCT/NOV

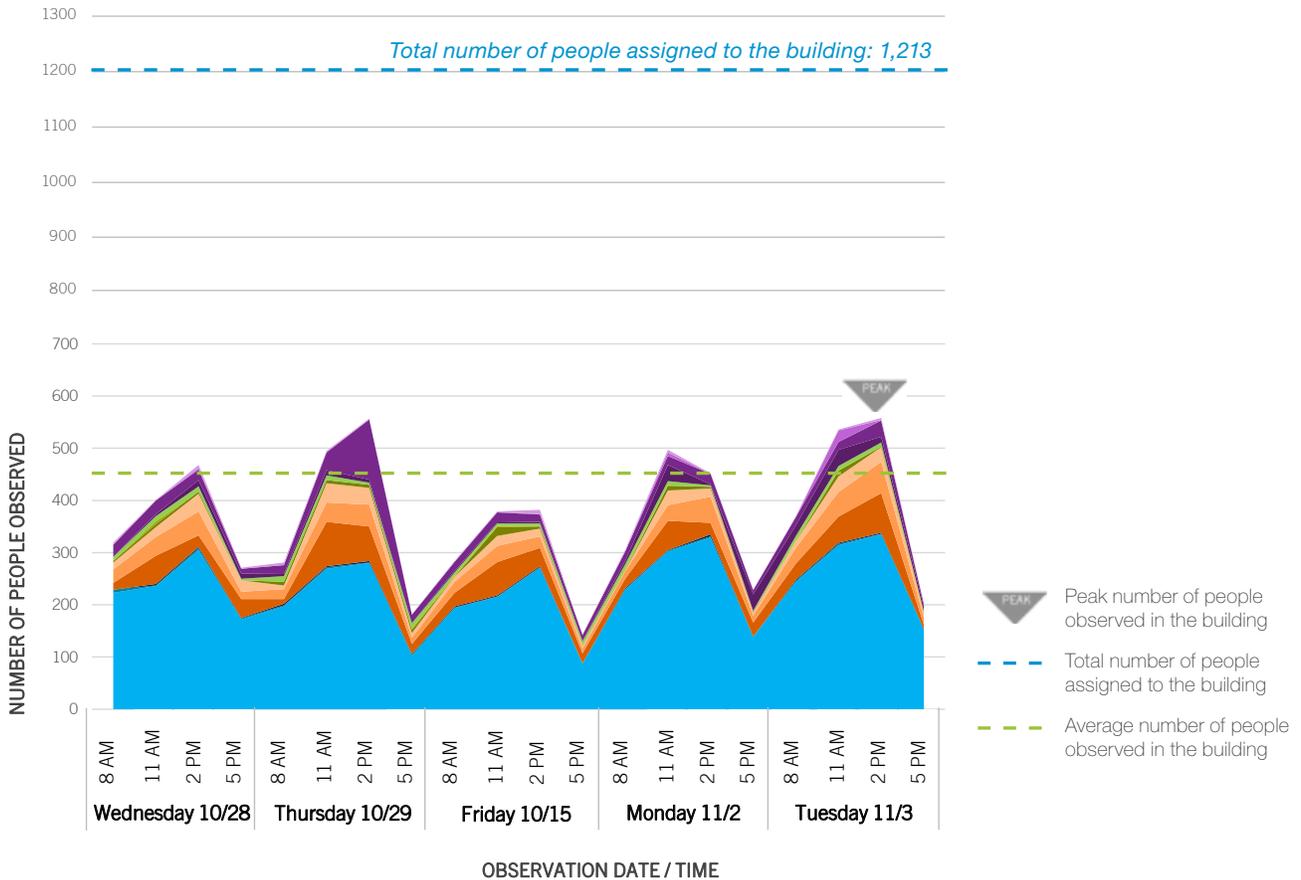


Figure 42 Total building occupancy by space types in the October/November study

Time Utilization Study, continued...

The data in Figure 43 and Figure 45 represent the number of spaces that were observed in use as a percentage of the total number of spaces in the facility. These calculations are done for each space type separately (e.g. occupied workstations vs. total workstations).

Of the people present in the building, most were typically observed working at their assigned workstations (Figure 44 and Figure 46). This observed distribution is consistent with feedback received from focus group and interview participants.

APR/MAY

A	B	C	D	E	F	G	H
Space Type	# of Spaces that physically exist in the building	Average number of spaces that were observed occupied at a time	Percentage of spaces that were occupied on average	Average Number of People typically observed in each space type	Peak number of spaces that were observed occupied at a time	Percentage of spaces that were occupied at peak	Peak Number of People observed in each space type
Assigned Workstation	1,213	265	22%	265	364	30%	364
Unassigned Workstation	288	0	0%	0	0	0%	0
Conference Rooms	39	8	21%	37	15	38%	87
Focus Rooms	378	24	6%	28	48	13%	58
Huddle Rooms	75	12	17%	22	22	29%	41
Breakout Areas	57	3	4%	5	8	14%	14
Town Centers	16	5	32%	9	11	69%	17
Other Support & Circulation	63	21	33%	49	42	67%	101
Total for entire building	2,129	n/a*	n/a*	414	n/a*	n/a*	604

Figure 43 Resource Utilization Summary in the April/May study

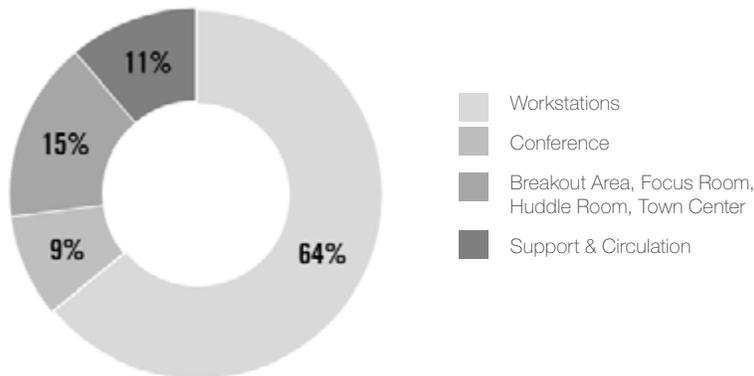


Figure 44 Average Occupant Distribution by Location in the April/May Study

Notes for Tables in Figure 43 and Figure 45

Column C: This is a literal count of the spaces that were observed to have people in them.

Column D: This is column C divided by column B, meaning the number of occupied spaces divided by the number of total spaces.

Column E: This is a total count of the number of people observed in all spaces.

Column F: This is a literal count of the spaces that were observed to have people in them.

Column G: This is column F divided by column B, meaning the number of occupied spaces divided by the number of total spaces.

Column H: This is a total count of the number of people observed in all spaces. The 'Peak Number of People observed in each space type' represents the maximum number of people observed in each space across all time frames. The 'Total for entire building' in this column represents the maximum number of people observed in the building in a single time frame.

*Totals for columns C, D, F and G are not calculated because the total would represent a combination of non-comparable space types.

OCT/NOV

A	B	C	D	E	F	G	H
Space Type	# of Spaces that physically exist in the building	Average number of spaces that were observed occupied at a time	Percentage of spaces that were occupied on average	Average Number of People typically observed in each space type	Peak number of spaces that were observed occupied at a time	Percentage of spaces that were occupied at peak	Peak Number of People observed in each space type
Assigned Workstation	1,213	233	19%	233	338	28%	338
Unassigned Workstation	288	0	0%	0	0	0%	0
Conference Rooms	39	8	21%	37	16	41%	85
Focus Rooms	378	24	6%	29	49	13%	60
Huddle Rooms	75	10	13%	18	19	25%	37
Breakout Areas	57	3	4%	4	9	16%	17
Town Centers	16	5	32%	8	8	50%	16
Other Support & Circulation	63	16	25%	37	28	44%	123
Total for entire building	2,129	n/a*	n/a*	366	n/a*	n/a*	558

Figure 45 Resource Utilization Summary in the October/November study

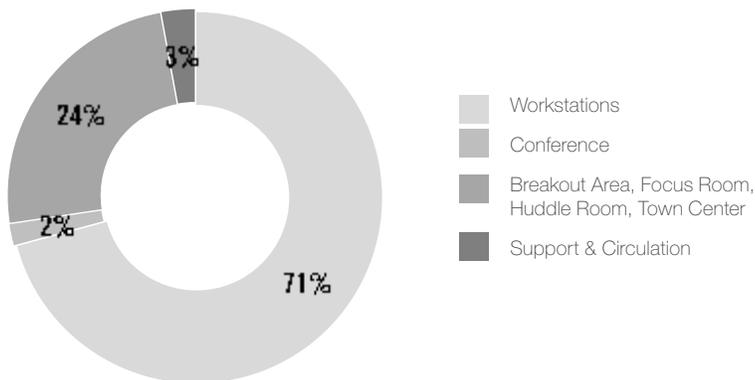


Figure 46 Average Occupant Distribution by Location in the October/November Study

Time Utilization Study, continued...

Workstations

Of the 1,501 workstations, 1,213 seats were expected to be used as there were 1,213 verified employees assigned to the building at the time of study. 280 seats remained to be assigned to support expected growth, so UCSF did not expect these seats to be utilized. Therefore, when looking at how people were using the workstations, the team used 1,213 as the base number.

Of the 1,213 seats assigned in the building, 22% were occupied on average in the April/May study, and 19% in the Oct/Nov study.

The highest occupancy level observed from both studies was 30% of the 1,213 assigned workstations in the building.

Between 529 to 543 workstations (44-45% of the 1,213) were never observed in use during the entire week.

Conference Rooms

On average, Conference Rooms were occupied 21% of the time in both studies. See Figure 47.

Focus Rooms

Focus Rooms were occupied 6% in the April/May study (7% in the Oct/Nov study). This is consistent with feedback received in interviews and focus groups. When used, they are almost always only occupied by one person. See Figure 47.

Huddle Rooms

Huddle Rooms were occupied an average of 17% of the time in the April/May study (13% in the Oct/Nov study). When in use, the spaces had an average of two people. This is consistent with feedback received in the interviews and focus groups. See Figure 47.

Breakout Areas

Breakout Areas were occupied 4% in the April/May study (5% in the Oct/Nov study). When in use, the spaces had an average of two people. This is consistent with feedback received in interviews and focus groups. See Figure 47.

Town Center

Town Centers were occupied 32% of the time in the April/May study (29% in the Oct/Nov study). The Town Centers were assessed as sub-areas rather than as a whole, treating each table or gathering area as its own survey point. This resulted in 16 survey points, across the three Town Centers in the facility. See Figure 47.

Outside Seating

Outside Seating was observed as the most highly used space type at 37% in the April/May study. However, when in use, the spaces were typically occupied by only two people. In the Oct/Nov study, Outside Seating was observed to be in use 15% of the time, typically occupied by four people. Given the weather and daylight changes, it is expected to see a downward shift in use of outdoor spaces in late Fall/early Winter. See Figure 47.

APR/MAY

Space Type	Average % of Time Occupied	Average # of Occupants in Each Space	# of Space Surveyed
Outside Seating	37%	2	3
Town Center	32%	2	16
Conference Room	21%	5	39
Huddle Room	17%	2	75
Focus Room	6%	1	378
Breakout Area	4%	2	57

OCT/NOV

Space Type	Average % of Time Occupied	Average # of Occupants in Each Space	# of Space Surveyed
Outside Seating	15%	4	3
Town Center	31%	2	16
Conference Room	22%	5	39
Huddle Room	13%	2	75
Focus Room	6%	1	378
Breakout Area	6%	2	57

Figure 47 Common Space Utilization Summary

TIME UTILIZATION SUMMARY

Results of the April/May study and the Oct/Nov study are not significantly different. Overall, the findings of the two observation studies are consistent with feedback from interviews and focus groups about usage.

The observed building occupancy is low compared to benchmarks from other office environments. Within more traditional office environments these studies often show 40-50% utilization of workstations, more than 2 times the average levels observed at Mission Hall. However, there are few benchmarks tracking academic office environments and it may be argued that given the lack of a baseline at UCSF, it is unclear whether the low occupancy is typical. Therefore, there's an opportunity for UCSF to begin to track utilization and establish a typical baseline that is relevant to the work of the University.

The low occupancy of the building and occupant feedback (such as the reported aversion to using the Breakout Areas) are apparent in the data. However, other data points contradict participant responses. For example, participants noted that the perimeter Focus Rooms were preferred over those on the interior. The logic was that windows in the perimeter rooms made them more appealing than those without windows on the interior. However, the April/May study showed 9% utilization of perimeter Focus Rooms and 7% utilization of interior ones. Similarly, the Oct/Nov study indicated 8% and 7% utilizations, respectively.

Occupancy Analysis

With the results of the Time Utilization Study in hand, the team addressed the question of what environmental factors contributed to the results.

There was a significant variance in workstation occupancy, with some being highly occupied, and others not being occupied at all. The variation was such that it warranted further investigation.

The team started by simply studying mean occupancy by job type, and found that Staff workstations are occupied twice as often of Faculty or other job type workstations, on average. See Figure 48.

The team then identified the degree to which basic identifying factors contributed to the variation in workstation occupancy, using a multi-level model. This was helpful in understanding how much of the variation is due to variables that were not related to the physical environment. The team found:

- 31% of the variance in occupancy can be attributed to difference between job types.
- 12% of the variance can be attributed to difference between departments.
- 49% of the variance can be attributed to individual differences or unknown thus the team chose to study spatial variables to better understand the variance.

Questions

The team then studied two questions for the Faculty population:

- What factors influence the probability of a workstation never being occupied?
- What factors influence the number of times that a workstation was occupied during the observation?

For both of these questions, the team studied the impacts of two variables related to employee background (Background Variables), and variables related to the physical environment (Spatial Variables).

Each of these is further described as follows:

Background Variables

The team hypothesized that Faculty with different job types might use the workspace differently. The team also felt that given concerns with audio and visual privacy, department size might be another important background variable.

- Job type: job type (Research Faculty, Clinical Faculty, or Clinical Fellow)
- Department size: number of people in the occupant's department

Spatial Variables

After establishing 49% of the variance in occupancy is not directly due to the background variables, the team selected two spatial variables for further study. The team's hypothesis was that spatial qualities of each workstation may have a significant relationship to the occupancy rate.

The two spatial variables selected for further study were:

- cor_depth: number of workstation buffers to primary corridors (1, 2, 3, 4, 5). Five is the maximum number of seats between any one workstation and the primary corridor.
- p_traffic: public traffic behind back (1 if public traffic 0 otherwise). Workstations with public traffic were defined as workstations that have a shared space behind their back, such as a Huddle Room.

What factors influence the probability of a workstation never being occupied?

Because every workstation fell into one of two categories - (1) used at least once or (2) never used - the team was able to study this question using a logit model, where the outcome is either 1 or 0. A logit model is a statistical regression analysis that is ideal for analyzing data where the outcome is binary, as is the case in this question. The output is the probability that the outcome (that a workstation was occupied at least once) will be equal to 1.

The team conducted a logit regression analysis in which the independent variables are the Background Variables and Spatial Variables described previously, and the dependent variable is occupancy (1 if the workstation was occupied at least once, 0 if the workstation was never occupied).

The team found:

- Job type: Faculty type is significant ($p=0.007$). The workstation of a Research Faculty is more likely to be occupied at least once when compared to other Faculty groups (Clinical Faculty, Clinical Fellows). See Figure 49.
- Buffer from corridor is significant ($p=0.022$). Sitting deeper (number of workstations) from primary corridor is associated with a greater chance of being occupied at least once.
- Department size: Not significant
- Public traffic: Not significant

If the p-value was less than the significance level (e.g., $p < 0.05$), then the team concluded that the effect reflects the research variable rather than sampling error. For this analysis the team used three levels of significance: $p < 0.001$, $p < 0.01$, $p < 0.05$. All suggest a significant result.

Job Type	Occupancy Percentage	Count
Clinical Faculty	12%	147
Clinical Fellow	13%	65
Research Faculty	22%	55
Researcher	26%	8
Staff	57%	283
Student	17%	37

Figure 49 Job type occupancy percentage on available sample

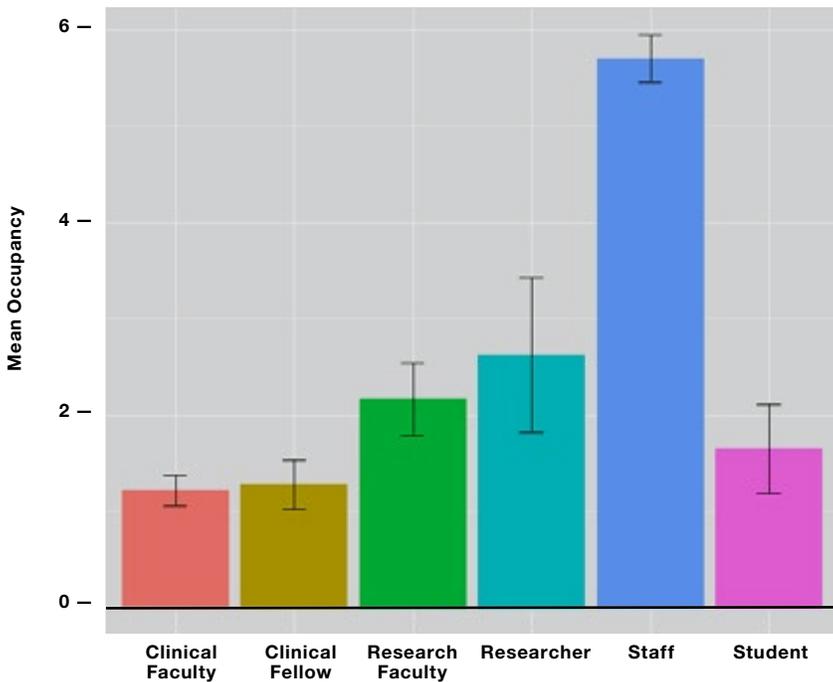


Figure 48 Mean occupancy (in number of observations) by job type

Occupancy Analysis, continued...

What factors correlate to workstations being used more than others?

Because the outcome in this question is not binary like the first question, the team needed to apply a different analysis model. The team chose to use a Poisson distribution, a model that is ideal for analyzing a variable number of occurrences in a fixed time period. In this case the number of occurrences was the number of times that a workstation was observed to be occupied.

Furthermore, a Poisson distribution is particularly well suited to a data set that is heavily skewed toward a single value – as was the case here, with many workstations exhibiting a value of zero.

The team conducted a Poisson distribution analysis in which the independent variables are the Background Variables and Spatial Variables described previously, and the dependent variable is occupancy (number of times a workstation was occupied during the week of observation).

The team found:

- Job type: A Research Faculty workstation is significantly ($p < 0.001$) more likely to be occupied than other Faculty types (Clinical Faculty, Clinical Fellow).
- Size of department (deptsize) is significant ($p < 0.001$). Faculty members from a larger department tend to use their workstations less.
- Buffer from corridor is significant ($p < 0.001$). Sitting deeper (number of workstations) from primary corridor is associated with greater occupancy.
- Public traffic: Not significant

If the p-value was less than the significance level (e.g., $p < 0.05$), then the team concluded that the effect reflects the research variable rather than sampling error. For this analysis the team used three levels of significance: $p < 0.001$, $p < 0.01$, $p < 0.05$. All suggest a significant result.

For future projects, and for future adjustments in Mission Hall, it will be important to consider:

- Staff workstations will likely have a much higher occupancy rate than other job types.
- Clinical Faculty and Fellows will likely occupy their workstations less frequently than Research Faculty.
- Smaller departments will likely have higher workstation occupancy than larger departments.
- The analysis shows that sitting further from a primary corridor is associated with higher occupancy. These seats may be preferable due to the higher level of protection from foot traffic.

Qualifications

- Null model and significance of variables: In order to test the validity of the variables studied, the team compared the models (both logit and Poisson) against a null model (a model with no independent variables). The Null model is significantly different from both of these models, indicating that the independent variables studied have a significant impact on the outcome. If there was no significant difference, it would indicate that the independent variables did not have significant impacts on the outcomes. The deviance between the logit model and the null model was $p=0.011$. The deviance between the Poisson model and the null model was $p<0.001$.
- Job Types: It should be noted that job types were only identified for 541 individual workstations, due to limited data available from the University. This study should be revisited when all job types in the building are known. However, the occupancy patterns of the sample set appear to be consistent with the whole.

Summary of Indicators



Satisfaction

- Lower attendance
- Decreased optimism
- Concerned about recruitment/retention
- Decreased respect/increased disrespect
- Resigned to the situation
- Limited change communications



Well-Being

- Perceived lack of control of personal space
- Frustrated by poor building maintenance
- Challenged by facility location and commutes
- Increased time to access the clinic
- Limited neighborhood character as it develops
- Differentiated spatial quality
- Challenged by spatial organization
- Increased space efficiency
- Eliminated shared offices
- Challenged by furniture/ergonomics
- Challenged by lighting quality
- Improved views
- Improved public space
- Yet to be delivered amenities
- Limited transportation
- Limited campus connectivity
- Challenged by culture
- Variance in generations and perception
- Decreased group identity
- Unclear about preferred adjacencies
- Limited wayfinding



Work Effectiveness

- Increased distraction
- Reduced privacy (Confidentiality, Conversation, Visual Privacy)
- Decreased productivity (Facility Use, Administrative Burden)
- Decreased interactions between colleagues (Isolation, Informal Interactions, Formal Meetings, Collaboration between Buildings)
- Disrupted by sound (Noise Generation and Noise Management)
- Limited personal technology provisioning and limited training for building technologies (Laptops/PC, Telephone Use, Wi-Fi, Printers, Technology Support, Conference/Classroom Technology, Conference Rooms Microphones, Room Scheduling Software, Mobile Work Tools)
- Limited storage



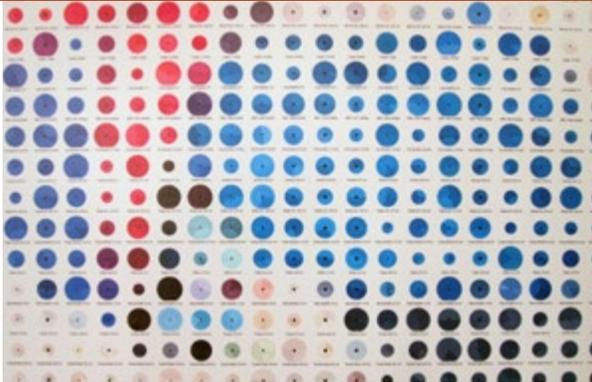
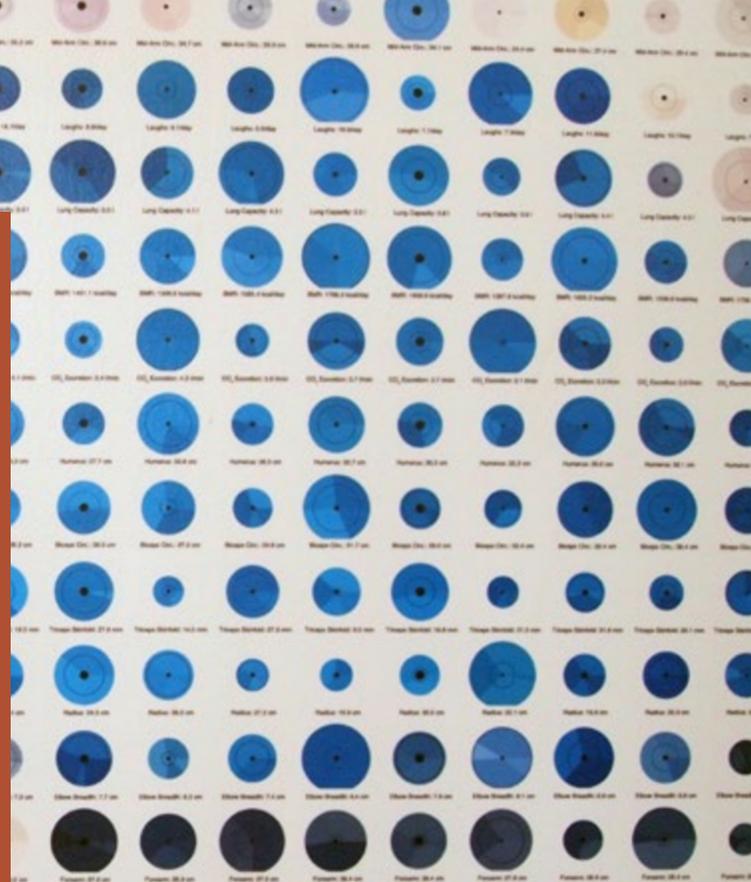
Engagement

- Frustrated by limited awareness of the overall process
- Feel undervalued by UCSF
- Frustrated by the use of corporate comparative cases and the piloting at UCSF
- Frustrated by the overall move management and communication
- Frustrated by the lack of building use protocols
- Required to adapt or work elsewhere to complete work resulting in less engagement with UCSF

4

WORKPLACE RESEARCH STUDY

Summary



Results suggest five major categories of improvements that will likely increase Satisfaction, Well-Being, Work Effectiveness and Engagement.

IN THIS CHAPTER

- ▶ Summary Indicators
- ▶ Recommendations
 - TECHNOLOGY
 - COMMUNICATION
 - ENVIRONMENTAL ADJUSTMENTS
 - COHESION, SOCIAL AND CULTURAL ISSUES
 - GOVERNANCE
 - NEW WORKING GROUPS
 - ADJUSTMENT IN PROCESS
- ▶ Recommended Future Study

Summary Indicators

Research results summarily identify decreased levels of overall Satisfaction, Well-Being, Work Effectiveness and Engagement for Faculty as well as Staff. As these are key indicators for UCSF to follow, these findings suggest the need for both near-term and longer-term actions to improve the situation at Mission Hall and to improve the overall process for developing new facilities at UCSF.



Satisfaction

Results demonstrate that apprehensions experienced by Faculty and Staff prior to their relocation to Mission Hall were reinforced after their move. Findings show decreased levels of satisfaction among Faculty and Staff across a variety of measures including their attendance at Mission Hall and their lack of optimism about their futures and the potential to recruit others to work there. While there are some responses that show increased satisfaction, such as with the provision of community spaces, these are less frequent.



Well-Being

Results suggest that Faculty and Staff well-being has declined since their relocation to Mission Hall. For example, environmental stressors such as lighting, spatial quality and ergonomics coupled with cultural stressors such as loss of group identity and personal control of one's workspace combine to create an overall workplace that is perceived, by most, to negatively impact well-being.



Work Effectiveness

Results unambiguously demonstrate that Faculty and Staff perceive themselves to be less effective at Mission Hall than in their previous work environments. Visual privacy, noise and sound privacy were top concerns impacting their effectiveness. Also many described the lack of technology appropriate to the environment as a contributing factor.



Engagement

Results suggest that Faculty and Staff are less engaged since their relocation to Mission Hall. A key contributor is that Faculty and Staff come to the facility less than they did at their previous locations. Most reported decreasing levels of interdepartmental engagement as well as escalating tensions stemming from distractions. These in turn often discouraged colleagues from trying to connect more with one another for fear of disturbing others nearby.

Recommendations

Each of these are explained in Chapter 3: Findings.

Across these four major categories of Satisfaction, Well-Being, Work Effectiveness and Engagement, prior to occupancy, participants were most concerned about basic workplace functionality related to their Mission Hall move.

Following occupancy, their concerns shifted slightly with their daily experience at Mission Hall. Technology continues to be a major challenge as does cohesion between and within departments. Environmental adjustments and communication continue to be of concern as well. However, the overall building governance and emerging social/cultural issues gained prominence in the discussions. While preoccupancy responses addressed the first four, post occupancy responses added the latter two. Each of these is described further below.

These concerns fell into the following categories:

- Technology
- Communication
- Environmental Adjustments
- Cohesion, Social and Cultural issues
- Governance

TECHNOLOGY

Technology refers to the need to equip the occupants with the tools necessary to take advantage of an Activity-Based Workplace.

Most participants noted that they were not provided with laptops or headsets as part of the move and questioned how they were to move freely in Mission Hall without those resources. Others questioned available Conference Room technologies and how training was to occur. Again, in these cases, participants were not reflecting on their previous environments, which most often were very limited in these same ways. However, Faculty working in offices may not have had these requirements previously.

Following occupancy, these expected technology roadblocks surfaced in a variety of ways. These include:

- Shortcomings in the provisioning of tools at the individual level to allow occupants to move freely throughout the facility and to take advantage of the variety of environments offered
- Limited awareness of the technologies provided in Conference Rooms and even more limited awareness of how to best leverage those for the work of the School of Medicine
- Technologies provided in Conference Rooms and classrooms require reevaluation in terms of tools provided and the associated support required to learn how to operate them and to maintain them over time.
- Limited support for the technologies provided, both in terms of necessary hardware connections as well as in software, training and trouble-shooting.
- Scheduling software needs to be considered to improve wayfinding and coordination among team members. If team members are asked to 'find an open Focus Room' it is difficult to coordinate meetings as the destination is TBD until the last minute.
- Limited provisioning of copy/print/scan machines given the volume of occupants and the code-based use of these printing services to meet HIPAA requirements. This requires reconsideration of the number of machines as related to the total number of occupants.
- Limited ability to digitally connect across campuses, taking advantage of readily available technologies in order to reduce commute time between facilities
- Unclear chargeback systems and associated budgeting per department resulting in limited connectivity across campus locations and/or increased commute time
- Unclear responsibilities across the various university technology support teams resulting in delays in responses and/or lack of response to Faculty/Staff requests for support
- Misalignment between expected behavior and tools provided (such as controlling noise in the open plan while providing a speakerphone at the workstation as well as Wi-Fi instability)

Recommendation

Conduct a technology review of the issues in order to prioritize concerns and to immediately begin improvements. Having appropriate tools is a core criterion for the success of any workplace that encourages onsite mobility and the adoption of digitally-mediated work [across locations using Skype, Jabber, etc].

COMMUNICATION

Communication refers to the need to increase overall sharing of information as well as to address unanswered questions in a different way.

While UCSF created an internal website and assigned affiliates with stakeholders groups, on the whole, participants were frustrated with information flow.

Much like the technology concern, information concerns about previous work environments were not raised.

Following occupancy, participants noted increasing frustration with the limited availability of information as well as the inconsistency of response. These concerns appear to be based on the fact that most information was either posted online in a web resource that the majority did not use, or were generated within departments resulting in inconsistent information. The lack of a 'building voice' creates multiple parallel channels that in turn negatively impact participants as they sort through the various communications and try to make sense of what is in process to improve their situation.

UCSF has invested significant time and resources to create Mission Hall-focused communications that were both meaningful and correct. However these were not resonant with participants.

Communications should be reviewed with assistance from departmental representatives who are collecting feedback from occupants. These colleagues will have the best sense of where information is needed and where concerns reside as well as how to best connect communications within the departments to a broader Mission Hall strategy. Direction should be developed with the advice of the Department Chairs.

Recommendation

Restructure the overall communication process, focusing on critical change management issues and devising a comprehensive program that addresses ongoing concerns from occupants. A comprehensive communication program links key information sharing, training and change management support. This would include the primary issues identified herein and also capture the more nuanced daily concerns for the occupants.

With appropriate departmental representation (from the Mission Hall Working Group) in such a discussion, the Communications Team could have a clearer understanding of the range of issues to be addressed and the best means to engage Mission Hall occupants.

ENVIRONMENTAL ADJUSTMENTS

Environmental Adjustments refer to the ongoing changes to the physical environment.

The team recognizes that the University is in the process of evaluating a series of possible adjustments, such as increasing enclosure of the Town Center, repurposing some of the Focus Rooms, improving building secured access and changes to building maintenance routines. As responses to expressed concerns from occupants, these need to both be addressed and also to be properly communicated to the occupants as a whole.

- Focus Rooms require reevaluation in terms of their sound isolation, their technology and furniture as well as in terms of the ratio of rooms provided.
- Huddle Rooms require reevaluation in terms of their sound isolation, their technology and furniture as well as in terms of the ratio of rooms provided.
- Breakout Areas require reevaluation in terms of their sound isolation and furniture.
- Town Centers require reevaluation in terms of their sound isolation as well as their maintenance. Wayfinding needs to be developed so that there is a building-wide approach
- Reconsider density of machine per occupant.
- Isolate noise-generating activities from heads-down work environments.
- Evaluate storage space and equipment space to assure support for key work functions.

Recommendations, continued...

- Clinicians should be given consideration for touch-down locations in the clinic/hospital.
- Personalization protocols require development and communication.
- Lighting should be evaluated given the number of complaints and the number of lamps removed within the open work environments.
- Given UCSF's ergonomics program, occupants should have access to those resources.
- Piloting of changes should be part of the process as these recommendations may require iteration to properly align with work requirements.

Recommendation

Make environmental adjustments to both demonstrate that the university is responsive to its Faculty/Staff and also to understand the range of possible adjustments that provide the best outcomes for the occupants.

COHESION, SOCIAL AND CULTURAL ISSUES

Cohesion refers to the need for the community of Mission Hall to come together in order for the environment to be successful.

Organizationally, there appears to be a sense of disconnection between the various departments which limits teams' ability to see Mission Hall as a shared resource for their community.

Cohesion may have been the greatest attribute of the previous environments. Staff had found ways to be successful in spite of their environments. Faculty were mostly satisfied with their offices. Together, the departments were getting their work done and were performing with their routines in place. The shift to a new environment not only changes those routines, but with Mission Hall, also changes the spaces and technology that supported those routines. Without offices and suites, participants questioned how they would maintain their group identity and also how they would control their daily work flow.

Following occupancy, participants noted significant downgrades in group cohesion. They expressed concern about the apparent lack of attendance at Mission Hall but also noted a number of other issues negatively impacting occupants who did come to Mission Hall.

Participants noted a range of personal behaviors that are symptomatic of a larger set of negative group dynamics at Mission Hall. Examples include reprimands of staff in open office environments, 'shushing' those nearby, disruptive use of technologies [such as use of speakerphone functions] in the open office and verbal admonishments about window blind levels. These examples point to assumptions that these behaviors are acceptable in the workplace. Fundamentally they also suggest that there is a lack of respect among coworkers and/or a lack of self-awareness from those instigating the behavior.

These behaviors create stress within the work environment and in doing so disrupt occupants' ability to focus on their work as well as their interest in engaging with their departments. Participants specifically described how these behaviors discourage them from coming to Mission Hall as well as discouraging them from speaking to colleagues while at Mission Hall.

Concerns include:

- Lack of good neighbor policies/approach in terms of sound management
- Inconsistencies in sound management across hierarchical roles
- Inappropriate use of speakerphones
- Inconsistencies in departmental leadership expectations on attendance at Mission Hall
- Inconsistent provisioning of group resources
- Emergence of 'boundaries' signifying group ownership of spaces
- Loss of group identity in open plan environment
- Limited campus life activities
- Lack of Floor identity
- Lack of a sense of place within Mission Hall

Recommendation

Establish a series of good neighbor policies that address shared resources, sound management, lighting/window blinds management and similar issues, developed with Faculty and Staff participation and endorsement.

Establish an agreed approach and messaging regarding attendance at Mission Hall.

Develop an approach to departmental group identity that is in keeping with the UCSF SoM goals for Mission Hall but that also allows for departments to capture some sense of personalization and in doing so to begin to establish an environment that they may comfortably occupy.

Develop Mission Hall community activities to begin to connect departments in meaningful ways.

GOVERNANCE

Governance refers to the daily management of policies and facilities.

As part of the transition from distributed departments to collocated departments, this critical function was not reestablished. UCSF clearly needs an approach to the governance of the building as Mission Hall occupants require a set of policies/protocols for the environment as well as directed daily support to operate and maintain their work environment.

Following occupancy, participants noted problems with building governance, including maintenance, space use policies, building security, and provision of hospitality resources such as beverages and supplies.

Recommendation

Develop a Mission Hall Governance Committee that in turn will develop, in concert with university representatives from technology and capital programs, key governance policies and budgets across Mission Hall. This includes basic building operations protocols and supports as well as management of the common spaces across all floors including provision of basic amenities such as beverages.

Review current building maintenance approach against feedback from occupants.

Develop building-wide security protocol.

Develop process to provide departments with greater decision-making power regarding how they use spaces within their unit.

NEW WORKING GROUPS

To address these issues, UCSF has formed three working groups: The Open Plan Workplace Governance Task Force, the Programming Committee and the Working Group to support all UCSF new building projects.

Open Plan Workplace Governance Task Force

To address the deficiencies of Mission Hall and to successfully develop alternate open plan designs for future buildings, Chancellor Hawgood established the Open Plan Workspace Governance Task Force. The task force was charged with developing principles for programming, designing, governing, and occupying open plan workplace environments at UCSF.

Programming Committee

The charge of the Programming Committee is to provide advice and recommendations on building-wide programming issues to guide the development of the building. The Programming Committee findings and recommendations will be reported to the Space Development Committee.

Working Group

The charge of the Working Group is to represent users and provide detailed programming input related to occupant requirements. The Working Group recommendations will be reported to the Programming Committee.

Recommendations, continued...

ADJUSTMENTS IN PROCESS

The UCSF Open Plan Task Force is actively addressing some of the issues identified from the research to date. The team recognizes that Mission Hall is a work in process and as such is working on these ongoing issues. To date, the Task Force developed principles in the following areas:

Configuration of Workspaces in Enclosed and Unenclosed Rooms

1. Creation/placement of private offices
2. Assignment of private offices
3. Assignment/placement of workstations

Allocation of Workspaces and Support Spaces

1. Ratios of support spaces to workstations/offices and of support spaces
2. Local management of assignment of workspaces

Environmental Features

1. Acoustics/sound transmission
2. Ergonomics
3. Privacy
4. Way-finding
5. Features of Focus Rooms/Huddle Rooms and Breakout Areas
6. Signage and displays

Technology

1. Classrooms
2. Conference Rooms
3. Focus/Huddle Rooms
4. Copy Areas
5. Workstations
6. Building-wide

Governance

1. Governance structure
2. Building Use Protocols and Procedures
3. Zoning based on activity types or programmatic adjacencies
4. Managing expansion and contraction and movement of programs in open plan environments
5. Audits of utilization

The Task Force concurs with the preliminary findings of the Mission Hall Workplace Research Study that there are major deficiencies in the building, which need to be addressed to enhance functionality and utilization. The Task Force strongly recommends that immediate interventions be taken to correct the deficiencies, which could be in the form of governance, communication/training, non-capital improvements and capital improvements, and that longer term improvements, including capital improvements, be undertaken as soon as is reasonably possible, and well underway within one year after the acceptance of the Task Force's report and recommendations by the UCSF Space Development Committee. For further information see the Open Plan Workspace Governance Task Force Draft Report, January 2016.

Recommended Future Study

EVALUATE WORKPLACE RENOVATION PROTOTYPES

Given the range of adjustments that are recommended, the team also recommends the development of a prototyping process that allows smaller adjustments to be evaluated relatively quickly before the UCSF makes the commitment to a larger set of investments. For example, providing alternative seating locations for noise-generating functional roles, separated from those who are heads-down the majority of the time, could be easily tested to determine whether satisfaction with sound management improved. Similarly, replacement furniture in some Focus Rooms could be evaluated through a zone or floor poll that encourages occupants to test out new chairs and provide feedback. Such near-term study of these targeted improvements is an important contribution to the long-term success of Mission Hall as well as to the development of strategies for other new buildings.

MONITOR SUCCESS MEASURES

Throughout the research process, participants provided feedback about how they measure success in their jobs. These success measures should be understood by the University and considered as part of a longitudinal study to understand impacts of workplace on outcomes.

Research Measures

Participants suggested that future evaluations consider the following:

- Grant application success as compared to previous years
- Publications
- Recruitment / Attrition or Retention
- Sick-days
- Utilization of Mission Hall/Time working elsewhere
- Faculty and Staff satisfaction and engagement
- Patient care delivery and satisfaction
- UCSF's ranking and the perception of excellence
- Educational outcomes – success in the training of the next generation of Researchers and physicians
- Increase or decrease in collaboration

Grants

Many participants responded that grant funding was the primary way that they measure success in their job. Primary sources included NIH, CDC, CHRP, HERSA, and WHO. Grant funding was most often cited as a primary success metric for Research Faculty, but was occasionally mentioned by Clinical Faculty and Research Staff.

Publications

Publications were mentioned by many participants as key measures of success. For many participants, they considered publications and grant funding to be complementary. Some indicated specifically that the number of publications was an important metric. Speaking engagements were also noted as a related measure of success.

Recommended Future Study, continued...

Recruitment/Attrition or Retention

The ability to compete with peer institutions in recruiting the top Faculty is an important metric. Similar is the ability to retain top talent.

Institutional Goals

A few respondents mentioned UCSF's over arching institutional goals as measures of success. Supporting the global health agenda and ensuring financial performance were both cited as key measures at the institutional level. On another level, the ability of the University to attract and retain the best and brightest Researchers and physicians and ensure their satisfaction and productivity supports these broader institutional goals.

Day to day

Many participants mentioned the efficient completion of daily tasks as their primary measure of success. This was a common response among Staff and Faculty, both Research and Clinical. Making sure their work product was completed well and on time was a common theme across many different types of work. Administering and maintaining smooth operations was another important measure. Ensuring that Faculty and Staff that used the Mission Hall workspace were taking less sick days and were feeling satisfied and productive were also articulated as important measures of success.

Utilization of Mission Hall/Time Working Elsewhere

Monitoring utilization patterns by department and function will provide critical insight into whether Faculty or Staff increase or decrease their time onsite.

Faculty and Staff satisfaction and engagement

Developing a Faculty satisfaction and engagement survey and complementing the existing Staff engagement tool with post occupancy research results will offer greater insights.

Patient Care

Clinical participants often responded that their primary measures of success were related to patient care. Patient satisfaction, speed of service, and the delivery of quality care were noted frequently. Most of the comments focused on qualitative assessments of care rather than quantitative metrics. Throughput and efficiency of service delivery to the patient were also noted as success metrics of patient care. Patient care measures were similar across Clinical Faculty and Staff, but were not often mentioned by Research employees.

Patient Outcomes

Patient outcomes were often mentioned as a primary measure of success among Clinical participants. Patient reports were noted as an important source for assessing the outcomes. Finally, working with patients and families to understand their level of satisfaction from their interactions with UCSF was described as another area of potential investigation in the success of the new workplace and its impact on Clinical operations.

Recognition

Respect and prestige were often noted as important indicators of success. The geographic scope of recognition varied by participant, with some indicating a goal of being recognized in Northern California, while others cited international recognition as one of the country's top medical schools and Research institutions.

Education

Many Faculty cited educational metrics as key indicators of success. Enrollment numbers, student success metrics, and level of training were all mentioned as indicators for the evaluation of success.

These measures clearly cannot be summed up in this initial research program. Subsequently, a longitudinal study should be designed to monitor these indicators as related to open plan work environments and their applicability to an academic setting.



Challenge.
Pursue.

UCSF

PERKINS+WILL