TRANSLATIONAL GUIDE FOR WORKPLACE DESIGN

DEA 3530: PLANNING & MANAGING THE WORKPLACE

Design & Environmental Analysis
College of Human Ecology
Cornell University
DEA 3530 - Planning and Managing the Workplace: Evidence-Based Design and the Organizational Ecology

Fall 2014

Faculty: Dr. Rana Sagha Zadeh

Industry expert representatives:
Doug Bazuin, Research Lead, Insight + Exploration, Herman Miller
Tom Harvey, FAIA, MPH, FACHA, LEED AP, Principal and Senior Vice President, HKS Architects & CADRE
Dr. Upali Nanda, Assoc. AIA, EDAC Vice President & Director of Research, Executive Director CADRE, HKS Architects & CADRE

Research team: Gourab Kar, Hessam Sadatsafavi

Design team: Madison Chung, Casey Franklin

Teaching Assistant: Amy Vu

Student authors:
Caroline Burchell, Design & Environmental Analysis ‘15
Madison Chung, Design & Environmental Analysis ‘15
Amanda Ho, Design & Environmental Analysis ‘15
Zena Kolliesuah, Information Science ‘15
Freeman Love, Human Development ‘16
Erin Mathios, Human Development ‘16
Alexandra Rajan, Design & Environmental Analysis ‘15
Alice Wang, Design & Environmental Analysis ‘15
Anna Zorn, Design & Environmental Analysis ‘16

Images courtesy of:
HKS Architects

Sponsors: HKS Architects, the Center for Advanced Design Research and Evaluation, Herman Miller, EL+R
ACKNOWLEDGMENTS

This booklet is a summary of a semester long collaboration and exchange of knowledge and would not have been possible without the generous contribution of the following groups and individuals.

We would like to acknowledge the Department of Design and Environmental Analysis, Cornell University for supporting the translational project in the Planning and Managing the Workplace Course that at the very core made this novel approach to teaching research and service possible. We would like to thank HKS Architects, CADRE, and Herman Miller therefore for sponsoring the project, but more importantly for supporting the mission and goals and volunteering their insight, advice and experience with Cornell Students. We thank Upali Nanda and Tom Harvey from HKS, and Doug Bazuin from Herman Miller who championed this collaboration. We thank the guest lecturers, Gretta Peterson, Kate Davis, Jennie Evans, Doug Bazuin, Dave McGlashan, Upali Nanda, Dr. Hessam Sadatsafavi, and Professor Lorraine Maxwell, for sharing their valuable experience with the class and adding to the depth of the knowledge shared. We thank academic and industry advisors, Professor Alan Hedge, Professor Lorraine Maxwell, Gretta Peterson, Brian Green, Dan Noble, Kate Davis, Jennie Evans, Tom Harvey, Jeff Stouffer, Karrie Cardon, Doug Bazuin, Emily Seibert, Dave McGlashan, Brian Green, and Upali Nanda for mentoring the DEA students one-on-one, guiding the students on individual projects and sharing their experience and knowledge. We thank Professor Gary Evans for his advice on the structure and activities in the course.

We thank the key support by Engaged Learning Research for their critical support of the service learning component of the class and providing systematic methods and guidelines to enhance the experience for students and community partners.

The format and structure of this translational document was inspired by and modified from “Active Design Guidelines” by the City of New York (2010).
# TABLE OF CONTENTS

ACKNOWLEDGEMENTS ................................................................................................................. i

INTRO & SUMMARY .......................................................................................................................... 2

SECTION 01  
Modes of Work and the Living Office .......................................................................................... 4

SECTION 02  
Corporate Work Environments ................................................................................................... 12

SECTION 03  
Healthcare Outpatient Work Environments ................................................................................. 22

SECTION 04  
Healthcare Inpatient Work Environments .................................................................................... 34

SECTION 05  
Science, Technology, Laboratory and Creative Communication .................................................. 52

SECTION 06  
Tangible Business Outcomes (Health/Productivity) ......................................................................... 62

SECTION 07  
Human Centered Design &  
The Implementation of Research Into Practice ........................................................................ 72

SECTION 08  
Workspace Design Charrettes  
  Academic Environment ................................................................................................................. 84  
  Inpatient Environment ..................................................................................................................... 94  
  Outpatient Environment .................................................................................................................. 100

CLASS PHOTOS ................................................................................................................................ 114
INTRO & SUMMARY

Cornell undergraduate students had the opportunity to work with and learn from experts of the field at HKS, CADRE and Herman Miller to summarize the latest science and practice of workplace design. The team included nine undergraduate students ranging from sophomore to senior from the fields of Design and Interior Design, Ergonomics, Policy, Human Development and Information Technology. Madison Chung (DEA senior) conceptualized the graphic design, and Casey Franklin (PhD Student) mentored the design innovation process. Amy Vu, Teaching Assistant, led the communication, and coordinated the project. The research literature review and translational guide was led by Dr Hessam Safavi, researcher at Cornell and Gourab Kar, PhD Student at Cornell.

A series of lectures and workshops, including rich and diverse content, on workplace design was held by industry advisors. Key scientific literature was collected by the research director and faculty instructor and shared with the class. Students were paired with industry expert advisors who accepted to advise the students though a one-hour interview. The Industry advisors who mentored the students one-on-one for this class are Gretta Peterson (Herman Miller), Brian Green (Herman Miller), Dan Noble (HKS), Kate Davis (HKS), Tom Harvey (HKS), Jeff Stouffer (HKS), Karrie Cardon (Herman Miller), Doug Bazuin (Herman Miller), Emily Seibert (HKS), Dave McGlashan (HKS), Brian Green (Herman Miller), Upali Nanda (HKS), and Professors Lorraine Maxwell and Alan Hedge (Cornell University), who also guest lectured in the entire class and shared their experience in addition to one on one mentoring. Prior to the interview, students researched the topic and developed an unstructured questionnaire. Post-interview, they transcribed and systematically summarized learnings into the guidebook. Students also conducted an analysis of peer-reviewed literature and summarized literature in the form of a translational guide for practitioners. Finally they participated in a three-week innovation exercise to synthesize the gained knowledge and come up with creative ideas around three design challenges provided by the industry experts in Inpatient Setting, Outpatient clinic, and Education. The innovation project focused on application of evidence based design principles in workplace design to generate innovative approaches to critical issues facing workers, employers, and societies.
A translational document is a critical work that is proposed to fill the ‘gap’ between science and practice and make a difference in people’s lives. This document summarized the collaborative efforts of students, industry experts and academic advisers throughout the semester. It is meant to essentially translate evidence-in-research to inform applications-in-practice. The goal is to communicate the latest tested and published scientific knowledge on workplace design to the design practitioners who build and shape future workplaces and deliver a service to the community. Each student took responsibility for analyzing scientific literature one module related to his or her area of interest. The process of creating this document involved conducting a literature review of a diverse body of work covering topics such as wayfinding, lighting, views of nature, ambient air quality, patient safety and health, employee performance and well being, communication, visibility, organization culture etc to uncover patterns, discover insights and suggest guidelines for evidence-based design practice. Feedback from Cornell, HKS, Herman Miller and CADRE faculty supported the generation and refinement of the translational material.

The document is intended to be a working reference for design professionals to access, identify, adapt and apply findings from empirical research to specific design contexts and concerns. It is envisaged as a set of recommendations or guidelines for best practice; and is not intended to be a definitive set of rules that are universally applicable. This is a working document based on current evidence. As more research data is collected, and better methods to analyse findings emerge, the document will be updated to be in tune with the state of science. The translational material is meant to be for working professionals, and it needs feedback from the ‘consumers of research’ within the design community. We hope that professionals creatively apply strategies and guidelines suggested; and applications of evidence-based-approaches and methods in practice, inform and propel further research. Our goal is two-fold – to create a translational document; and more importantly, to enable a symbiotic dialogue between the spheres of research and application. We hope that such endeavors help bridge the gap between academia and practice, and advance the design profession.

The making of this document was a great learning process for the team at Cornell, and has been an intellectually enriching experience for one and all. We hope you will discover that the translational document offers actionable insights, suggestions and guidelines to base your design decisions; and also lead to new avenues for future research.

Rana Zadeh & Gourab Kar.
WORKSPACE DESIGN CHARRETTES
SUMMARY
Improving educational outcomes is a universal goal, and continual research reveals how factors in the built environment affects attention, retention, motivation, and learning. However, professors and students today suffer from outdated learning spaces, lacking in integration with teaching styles and technology. As course programming trends away from traditional lecturing and trends toward group discussion and collaboration, so too must the classroom support this. Using industry research to support these design guidelines, this active learning classroom strives to be inclusive, collaborative, ergonomic, engaging, and individualized.
PROJECT GUIDELINES

1. Users
Our focus was on students from Cornell University primarily in the College of Human Ecology. The classroom size is set to a maximum of 24 students.

Example courses: DEA 3530 Planning & Managing the Workplace, PAM 3120 Research Methods, DEA 2900 Universal Design

2. Activities
The classroom will be able to support lectures, individual work, small or large group work, small group discussion, and full class discussion.

3. Goals of Human Ecology
The mission statement for the College of Human Ecology emphasizes: fostering creativity, enabling students to think critically while facilitating multi-disciplinary discussion, incorporating innovative technologies, empowering students and professors, adapting to a variety of courses, and supporting active learning.

4. Supportive Behaviors
The space strives to embrace diversity and inclusion while enhancing a sense of community to encourage motivation and communicate the Cornell brand through a minimization of stress.
GOALS
Inclusive: Support all learning & teaching styles
Collaborative: Support teamwork and cross disciplinary interaction
Ergonomic: Comfortable & healthy space
Engaging: Active learning
Individualized: Have users have a sense of ownership in the space

Modular furniture: Creating an environment that enables interaction will facilitate the creation and transference of knowledge (Haynes, 2008).***

Daylight illumination creates a restorative environment and prevents eye strain and shaded windows to reduce glare (Ceylan et al., 2008; Newsham et al., 2009).***

LECTURE LAYOUT

Smartboards move along a track to be configured at the appropriate distance for the viewer and/or combined for group collaboration.

KEY
* = expert opinion
** = best practice
*** = empirical research
Smartboards allow easy sharing of information both for the professor and the students by allowing wireless projection of their various computing devices.

Classes can be made more interactive with dynamically updating class polls and questionnaires for constant active participation.

Professor has own desk that is movable for other configurations. Laptop stand is elevated so professor can easily see his/her presentation.

Dual purpose planters and storage provide elements of biophilia also conducive for restoration (Ceylan et al., 2008; Newsham et al., 2009)***
Power outlet hubs in the central classroom space can be covered for seamless integration with the flooring.
Magnetized strips around table for connecting.

Outlets lay flat to easily move furniture around the room.

Professor and students have ample space to circulate and meet with each group.

Power strip for Smartboards or for students to connect with their own devices.

4-Person layout

Magnetized strips around table for connecting.
Recessed hooks to create individualized space, increasing ease of mobility and reduced storage.

Integrated technology for enhanced engagement.

Magnetically connected tablet storage.
Ergonomic chairs to ensure positive physical health.

Additional tablet storage.

Low complexity environment and cool settings which is conducive for productivity and creativity (Ceylan et al., 2008; Newsham et al., 2008).***

Professor sits among students (Jankowska, 2007).***

Ergonomic chairs to ensure positive physical health.**


SUMMARY

Our challenge was to re-design the Intensive Care Unit wing into a more efficient layout that properly supports both patient and staff needs while also considering the needs of the families. The current layout requires long walking distances for nurses and does not provide adequate storage and support space. We also wanted to find a better balance between patient privacy and nurse visibility. Our design attempts to solve these issues in new and innovative ways.
1. Users
- 6 RNs
- 1 Trauma Nurse
- 1 RT
- 1 Care Navigator
- 1 PCS
- 1 Nursing Director
- 6-8 Physicians and APs floating at any point in time

2. Activities
Support and care for patients with traumatic injuries in need of specialized care

3. Behavior and Technology
- Fast and efficient communication between nurses and between nurses and patients
- Short walking distances for nurses
- Patient room visibility
- Adequate storage for all equipment and supplies
- Technology located in all rooms for nurses and physicians

4. Types of Collaboration
- Nurse and patient
- Nurse and nurse
- Nurse and family
- Nurse and staff
- All nurses and staff
- Patient and family

5. Challenges
Encourage proper care while reducing noise transmission and maintaining a balance between patient privacy and staff visibility.
GOALS
Increase visibility of patients to nurses and staff while maintaining patient and family privacy.
Create a space that is navigable and comfortable for all users.
Encourage care coordination while reducing noise level.
Focus on patient wellbeing and recovery time.
Support all nurse and staff activity through a variety of spaces.

Having multiple workstations reduces walking distances and allows nurses to spend more time with patients (Goelst, 2009).***

Place medical supplies in a place that is accessible to all staff (Clark, 2006).***

Half walls in nursing pod to increase visibility of patients from workstations (Pati, 2014).***

KEY
* = expert opinion
** = best practice
*** = empirical research
Create an ambient environment that includes plants and views of nature (Dijkstra, 2008).***

Include soft furniture for extended stay and comfort (Doug Bazuin).*

Include a photo wall to inspire and reassure families and guests (Casey Franklin).**

Provide a variety of seating choices and configurations to facilitate different types of interactions (Doug Bazuin).*
Increased natural light improves health outcomes and improved sleep patterns (Anjali, 2006).

Inclusion of elements of nature to reduce stress (Dijkstra, 2008).

Private bathrooms with easy access doors (Calkins, 2012).

Patient rooms should be designed for all users of the space, including family (Choi and Bosch, 2013).

Use of glass doors and windows for maximum visibility (Pati, 2014).

Medical supplies in a central, accessible location (Clark, 2006).


The demand for outpatient healthcare clinics is on the rise, and how such spaces are designed play a key role in the quality of treatment staff persons will be able to provide, and which patients will receive. According to an sg2 Annual Business & Technology Forecast, the prevalence of such outpatient care clinics is likely to expand by 30 percent between 2010 and 2020 (Herman Miller, 2011). It is imperative that we then look towards key innovative ways with which to improve the designed spaces and thus the quality of services provided. Within this project, we have specifically looked into the office layout and workplace design of healthcare practitioners.
1. Users
- 4 providers (3 exam rooms per provider)
- 4 medical assistants
- 1 chiropractor (2 exam rooms for chiro.)
- 1 RN Diabetic nurse educator
- 1 Dietitian (one exam room is used for education)
- 1 hotel space for visitor

2. Activities
Collaboration between providers and their medical assistant and between providers and the other team members. Patient follow-up calls by Nurse Educator. Individual work with the health record system to plan for patient visits and finish any documentation of the visit.

3. Behavior and Technology
   **Flexibility in Technology:** Currently desktop computers are the dominate form of technology both in the exam room and caregiver space. We would expect technology to shift to mobile devices such as tablets and mobile phones. Space should be flexible to change as technology does. Virtual Connections
   **Telemedicine:** Virtual connections to remote patients by staff to follow up on care.

4. Types of Collaboration
   Face-to-face discussion, one on one: provider to provider, provider to medical assistant, medical assistant to medical assistant, and other staff interactions.
   Small group discussion for more complex care planning, 2-4 people.
   Larger group discussion for the care team, 6-12 people. Can happen in the conference room for scheduled meetings or in more impromptu, huddles every morning and/or mid-day.

5. Challenges
Balancing the need for collaboration with the need for individual concentration. Balancing the need for privacy of patient health information and privacy required for concentration or a phone call with the need for visibility to other caregivers (not patients). Caregivers need to know who is running behind and needs help or who is available to help.
GOALS

Create a collaborative caregiver office environment, separated from the patient waiting area via back-of-house examination rooms.

Facilitate teamwork and cooperation, while providing secure environments within which physicians can telephone and/or video conferencing patients, so as to maintain confidentiality.

Support employee physical and emotional well-being through the use of ergonomic furnishings and elements of Biophilia, and the provision of flexible and controllable work furnishings and tools.

Centralize all components of the office workspace in an open-plan layout so as to streamline cooperation and information gathering, and enable practitioners to thus spend more time with their patients.

Create a flexible office environment that can accommodate different work styles and interactions, while also allowing future reconfigurations to be compatible with technological changes in practice.
DESIGN CONSIDERATIONS

1. Collaboration
Utilizing a centralized, open-office layout for the medical care professionals, enables an increased level of collaboration. The co-location of staff with multiple specialties significantly increases the capability for all members of the care team to engage in discourse regarding a patient, share their knowledge, and come up with an effective solution (Owen-Smith et al., 2012). Such an open layout can truly facilitate new ideas and approaches. Within our design, we hoped to physically manifest this idea of cohesive collaboration through our curved desk features and layout. We created semi-circular desks that seem to flow together, connected by larger circular tables, where staff persons can wheel their chairs to when partaking in collaborative work. These larger, circular tables can also be wheeled together when larger meetings occur. Our suggested layout proposes that Physicians sit back to back, and next to Medical Assistants – as these two professional groups work very closely together. However, we sought to seat two persons of the same specialty next to each other in each semi-circle unit, so as to provide somewhat of a buddy system. We have placed the Registered Nurse, Dietitian, and Chiropractor at the end of the row of tables, as their location corresponds with the exam rooms reserved for their educational trainings. A conference room was also provided so as to enable educational trainings and group problem solving.

2. Privacy & Confidentiality
Due to the confidential nature of medical information, it is imperative that physicians be provided with acoustically sound areas designated for individual work and telephone use. We decided to implement such a space through the use of stackable wall tiles. Such tiles can be altered and switched out for minor changes, and for larger-scale changes the entire wall can be reconfigured without creating waste or needing construction (DIRTT Environmental Solutions). This wall type is especially useful within medical care facilities, as technologies and recommended means of person-person interactions are continually changing. Such walls come equipped with plug and play power, can accommodate plumbing, and are customizable in material type and dimensions. Therefore, we suggest the use of both acoustic tiles - for privacy purposes, and a frosted glass tile - so as to provide visual access. This implementation reduces construction wastes and is a sustainable way to enable a highly flexible space. Within these rooms, we provided wall-affixed monitor displays, a desk, and an ergonomic task chair. These private rooms are hotel/reservation-based, and one can use a tablet panel just outside of the room to reserve it when necessary.

3. Physical Well-Being
Ergonomic furnishings and considerations should be provided to the workspace, including: task chairs, sit-stand desks, monitor arms, individual lighting units, and a pressure absorptive flooring. The provision of more dynamic and adjustable systems can lower cardio-metabolic health risks, repetitive stress/strain disorders and can increase productivity (Dainoff, 1985). Similarly, ergonomic task chairs can preserve vertebral health and that of the peripheral nervous system, as it provides support to the back’s natural curvature – further preventing bone re-modeling (Vettraino, 2003). The sit-stand desk will mitigate time spent in a sedentary position, allowing for more movement throughout the day and an increased blood flow and metabolic activity (Owen et al., 2012). This relates well with the relatively active tasks faced by
each medical practitioner. The flooring should also accommodate staff members standing for long periods of time (often for 8-12 hour shifts). Research has shown anti-fatigue mats can significantly decrease weight-shifting and pain/stiffness in the legs and feet for employees standing for more than 4 hours (Wiggermann and Keyserling, 2013). Also, the use of a cork-based flooring may provide a softer surface that also embodies sustainable materials. However, “while mats reduce discomfort, the effect of hours spent standing is much greater than the effect of flooring surface. This means that eliminating standing work, using sit/stand stations, or rotating seated and standing tasks will provide greatest comfort to the worker, regardless of flooring surface” (Wiggermann and Keyserling, 2013). Lastly, ergonomics is very cost-effective in its prevention of medical interventions for repetitive stress/strain disorders. The average perceived return on safety investment was found to be about $4.41 per dollar (DeArmond, Huang, et al 2007). It is important to note that in order to fully benefit from use of ergonomic products, training must oftentimes be provided to users (Robertson, 2004). To communicate a semblance of status, in adherence to more traditional methods, we have provided the physicians with executive chairs, and all others with a similarly ergonomic task chairs.

4. Psychological Well-Being
With the use of self-adjustable furnishings, as well as the provision of multiple seating arrangements and workspace areas, we have effectively given each health care professional the capability to control how and where they work. This sense of control can improve their overall psychological well-being and how they may choose to interact with their peers and create the best working solution for themselves (Evans, 2003). A staff lounge area is similarly provided as a means with which professionals can find relaxation within their busy work environment. Aligning with the theory of Biophilia, providing images of nature can create elements of positive distraction, which reduce patient and employee anxiety (Nanda et al., 2011). Similarly, placing positive images within work and healthcare environments can situate observers in optimistic contexts, and sky compositions activate regions of the brain associated with dreaming – indicating a relaxing effect (Pati et al., 2014). From this, we have decided to provide large skylights over the desk area, as well as supplemental ceiling lights and task lighting at each staff member’s desk. With this decision, glare may come into play on particularly sunny days, during which thin shades can be electrically controlled to cover portions of the skylights. We have also integrated natural elements though the form of potted plants, to be arranged atop filing cabinets between every other exam room.

5. Technology
Within the parameters given to us, we designed around the use of tablets by the medical professionals. On the desks provided to each staff person, we hoped to install monitor arms with mounts that could attach to both a typical monitor display as well as a tablet holding device - one that could enable a quick fit and release for the tablets. With the use of a simple, screw-mount on the monitor arm, throughout variations in technologies, one could adhere different supportive framework devices for screens as they change through time. Similarly, we ensure that the tables meant for group work would provide adequate room for multiple persons to use their tablets on the same surface at once. Additional collaborative areas, such as the conference room and phone rooms, are equipped with multiple monitors so that caregivers can better work together and share information (Medical Construction & Design, 2014). Lastly, outlets must be provided nearby each desk, and thru-flooring electrical installation may be best. All rooms, including the exam and phone/conference rooms should have occupancy light displays, so that medical care staff can visually perceive if the room is empty, if a patient is waiting, or if it needs to be cleaned (Mayne, 2014). These occupancy lights can be located above each room, and can be integrated into the tablet systems.

The layout of our workspace follows a back-of-house scheme in which the public and private spaces of the clinic are separated. The dual-entry exam rooms serve as an overlap between the more public waiting
room and hallway areas, and the private workspace at the center of the floor plan. This open-plan setting, removing physicians from their private office, enables a more centralized and, thus, collaborative caregiver environment (Mayne, 2014). It also provides a more secure environment in which physicians and assistants can discuss patients’ cases openly, without interruption or privacy concerns (Mayne, 2014). The implementation of our additional hotel conference and phone-use rooms further promotes the availability of privacy and patient confidentiality. The designation of a hallway and reception area solely for patient use allows for clarity in regards to wayfinding (Mayne, 2014).

7. Storage
Due to the dynamic nature of the centered desk and collaborative table area, as well as the nature of the sit-stand desks themselves, we decided to place filing cabinets and closets along the periphery of the room, between each exam room. This way, staff persons are provided with adequate and secure spaces for their personal belongings. The filing cabinets can be opened be either lock and key, or through a set of codes, so that any printed patient information may remain confidential. Additional filing cabinets, if needed, can always be added to the storage area within the facility as well. By locating filed information and stored supplies within the open-office setting, and in very close proximity to the exam rooms, practitioners can navigate the information and supplies around them in a more streamlined manner – while enabling the patient to remain in one location. This reduces the amount of time a practitioner would need to spend looking for and acquiring such materials, and thus will enable her/him to spend more time with the patient (Herman Miller, 2011).

8. Beyond the Office
It is important to note that this specific project solely documents the centralized office layout of the outpatient health care setting, and does not touch upon the examination rooms themselves, aside from their peripheral locations. Within this diabetes-based clinic, it would be worth exploring, through future research, how one might implement more space-based community involvement, hands-on training (in regards to diet and exercise), and other such specialized services (Herman Miller, 2011).
Desks are organized into teams of two, arranged with colleagues facing outward toward their assigned exam rooms (3 rooms per physician).

A chiropractor and dietitian each have their own exam room. They will be seated next to each other, proximal to their assigned exam rooms.

Physicians sit next to partnering physicians, while medical assistants will sit next to partnering assistants.

Phone booths provide private space for individual work.

A registered nurse will have her desk and exam room. Her desk will be next to a vacant hotel space reserved for a visiting physician or case manager.
Tables centered between desks serve as a collaborative space where multiple users can sit and tablets can rest/be compared.

Center tables have wheels, and can be pushed together during large meetings.

Conference room available for group discussions.

Staff lounge can enable more informal meetings.

Desks can be inverted and re-arranged to create a large, circular environment.
Curved desks can encourage interactions amongst different specialists. We hope to physically manifest this idea of cohesive collaboration through our modular furniture and layout.
A staff lounge will serve as a 
haven where colleagues can 
relax and contemplate during 
their shift breaks.

Three private phone rooms will serve as havens where staff members can contemplate and work individually away from the noise of the rest of the office. These spaces will be allocated for noise-sensitive tasks such as confidential patient phone-calls, video-conferencing (telemedicine), and research.*

A group collaboration room will be used as a haven where 2-3 staff members can converse and address specific topics. The room will be enclosed by glass, soundproof walls to maximize concentration and attention.*

A central office space will serve as a hive for medical colleagues to process and respond to daily tasks. Each staff member will be assigned a desk and cabinet proximal to their assigned exam rooms. This promotes efficiency by minimizing walking distance between the desks and exam room entrance.*

A printing station will serve as a landing where colleagues can regroup and gain composure immediately after scheduled appointments, otherwise known as “Warm Up/Cool Down.”* 

*Gretta Peterson, “Living Office Discovery”
Occupancy lights are to be located on the right side of every examination room door.

Sit-stand desks can increase productivity and provide a sense of control (Evans, 2003).

Cork flooring absorbs force that practitioners may experience from walking around.

Natural lighting is provided through the use of skylights, which provide positive imagery (Pati et al., 2014). Skylights can be covered via electronic shades to avoid glare.

Staff lounge, telephone booths, and the conference room are color coded for easy identification.
Wheeled furniture helps create a flexible and collaborative workspace. Individual task lighting on each desk.

Natural elements provide positive distraction, which can reduce patient and employee anxiety (Nanda et al., 2011).

Placing storage on the periphery helps practitioners navigate information and supplies in a more streamlined manner, thus enabling them to spend more time with the patient (Herman Miller, 2011).

Different chairs communicate status.

Glazed glass and acoustic panels create a private environment whilst also offering visual access.

Printing station serves as a landing space that supports quick and impromptu conversations in between appointments (Gretta Peterson).

Wheeled furniture helps create a flexible and collaborative workspace.


(n.d). DIRT Environmental Solutions.


Guest lecturer Doug Bazuin presenting to the class

Teaching assistant Amy Vu with guest lecturer Jennie Evans

Students with guest lecturer Gretta Peterson
Creativity workshop at The Potter’s Room in downtown Ithaca

Design sessions in studio

Students presenting their final project to industry representatives
DEA 3530 students and Dr. Zadeh
Top row (left to right): Freeman Love, Madison Chung, Anna Zorn, Amanda Ho, Alice Wang, Zena Kolliesuah, Dr. Rana Zadeh
Bottom row (left to right): Erin Mathios, Alexandra Rajan, Caroline Burchell