welcome to gypsonia

In Defense of a Contemporary Vernacular of Generic Materials

By

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A thesis submitted to the Faculty of Graduate and Postdoctoral Affairs in partial fulfillment of the requirements for the degree of

Master of Architecture

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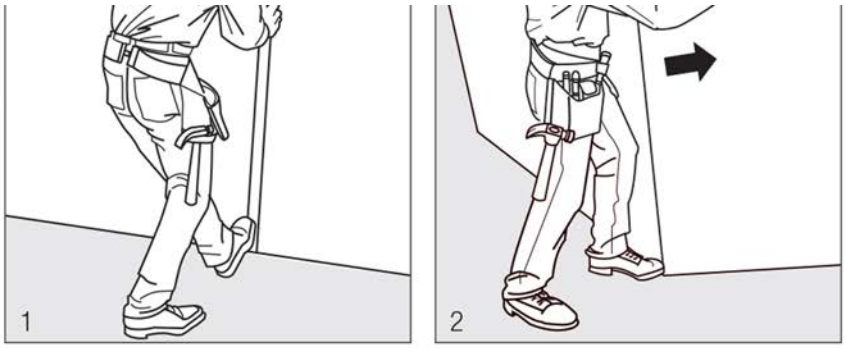

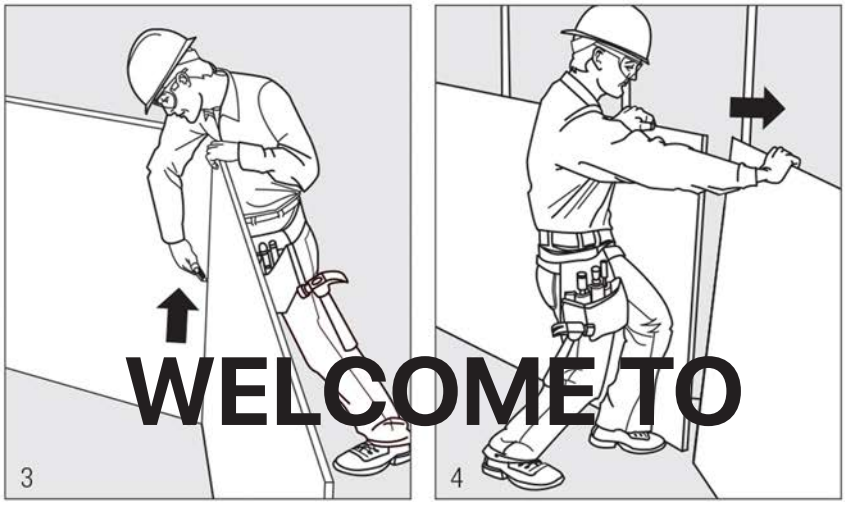

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tape with an adjustable edge guide and tip that accepts the utility knife blade. With this tape edge guide, use it for the desired width and place it against the board edge. The retractable blade is then inserted into the folded tape tip, and by moving both hands together the tool is drawn down the full length of the board to make a smooth and accurate cut. (See manufacturer instructions for proper use and any safety precautions.)

Cut and fit board neatly for pipes, electrical outlet boxes, medicine cabinets, etc. Holes for electrical outlet boxes can be made with a special outlet box cutting tool. For circular holes, an adjustable circular cutting tool or drywall router is available. Keyhole saws and similar cutting tools can be used for any type of cutout. After cutting hole, remove any loose face paper at cut. Refer to Chapter 14, Tools and Equipment, for examples of appropriate tools.

cation

Screws are applied with a positive-clutch electric power tool, commonly called an electric screwgun, equipped with adjustable screw-depth control head and a Phillips bit. The use of screws provides a positive mechanical attachment of gypsum board to either wood or steel framing.

Adjust Screwgun Set adjustment for proper screw depth. For gypsum panels (drywall), screwhead must be driven slightly below face of panel

Fig. 01

abstract

In the built environments of the West, the totalizing success of mass-produced building materials and assemblies has led to a homogenization of interior space. This condition is exemplified by the pervasive use of drywall and acoustic ceiling tiles that have, since their widespread implementation in the 1950s, become ubiquitously unavoidable materials. These materials and assemblies constitute a type of contemporary vernacular that has resulted in spaces that are variable and yet indistinguishable from one another.

Implicated in the widespread use of standardized materials, assemblies and details raise questions of control, authorship and agency in architectural practice. Positioning these wall and ceiling assemblies in relation to their modernist origins and investigating their current implementation, this thesis aims to highlight the significance of drywall and drop ceilings using a series of installations that draw attention to the use and implications of this disregarded set of materials.

acknowledgments

Firstly, I would like to express my appreciation of the staff and faculty of the school of architecture for their tolerance of the unsanctioned construction of large installations that, at times, could have been perceived as acts of vandalism. Thank you as well to my fellow students and classmates for the encouraging responses of amusement and confusion that I received in reaction to the alterations being made to the building.

My deepest gratitude goes to my advisor Federica Goffi who, since the beginning of my undergraduate education at Carleton, has continually expanded my horizons and been a source of many fascinating ideas and discussions. Federica's thoughtful insights and knowledge were fundamental to help contextualize my work and her unwavering support during the project was invaluable.

Special thanks to my dear friend Mati Contal for his willingness to be a sounding board for ideas throughout my academic career and for always being a valuable source of pointed criticism.

Finally, thank you to my family and friends who provided loving encouragement in moments of doubt and trepidation and patiently listened to rambling explanations of partially formed thoughts.

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Fig. 02

introducing banality

A significant portion of the Western built landscape, from the modern to the contemporary era, is comprised of buildings that manifest a convergence of standardization and economization. This includes a variety of typologies that are, to a large extent, designed and shaped by the interaction of utilitarian considerations and building regulations. The resulting buildings are equal parts mundane and chaotic, a hybrid of technocratic regulation and happenstance. In response to the dominance of these factors, large segments of our built environment are commonly disavowed and relegated to the uncelebrated periphery of architectural discourse and practice.[1] The classification of a building as a piece of architecture is in turn, a distinction reserved for projects that maintain a wide separation from any building that displays an ambivalent subversion of aesthetics in the name of utility and economy. This category of common buildings exhibits a type of anonymous quality that, due to the number of contributors involved in its creation, or the generic quality of its standardization components can be seen as Un-Authored.

A ubiquitous part of these Un-Authored buildings is a set of materials and assemblies that gained popularity in the post war decades.[2] This includes drywall and acoustic ceiling tiles which, in combination with cavity wall construction and suspended ceiling systems, have become a pervasive part of contemporary spaces. The origins of these systems can be found in the modern movement of the 1930s and the development of a series of new building technologies and methods of construction.[3] In combination with an increasing need for mechanical systems and plumbing, these factors conspired to create a need for the cavity spaces that drop ceilings and stud wall construction facilitate. The use of these componentized construction systems and assemblies also allowed for more efficient and economical methods of construction, which ultimately cemented the

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[1] Andrew Ross, "Foreward," in *Building (in) the Future: Recasting Labor in Architecture*, ed. Phillip Gordon. Bernstein and Peggy Deamer (Princeton Architectural Press, 2010), 09.
[2] Avi Friedman and David Krawitz, *Peeking through the Keyhole: The Evolution of North American Homes* (McGill-Queens University Press, 2014), 80.
[3] Reyner Banham, *The Architecture of the Well-Tempered Environment* (Chicago, IL: University of Chicago Press, 1969), 212.

widespread adoption of industrially produced building materials.[4] Outside of technical considerations, the success of these materials has given rise to a proliferation of spaces that are variable in form, but unified by a consistent materiality and neutral banality.

Despite any variation in form that the flexibility and modularity of these assemblies allows for, the overall effect of these systems is the creation of spaces with a predetermined set of qualities. The homogenization that results from this is in part due to the standardized construction and detailing methods that are used in tandem with drywall and suspended ceilings.[5] In this way the materials in question constitute a type of hypothetical space that exists, without being constructed, in a finished state. This space is comprised of materials and manufacturers' details that await a prescribed implementation. The materials and their corresponding set of typical details combine to create a consistent and reproducible outcome that is, in the eyes of the manufactures and trades, an important part of the desirability of these systems. As a consequence, the distinct qualities that result from the use of drywall and acoustic ceiling tiles allows these materials to be understood as part of a contemporary vernacular that defines a vast number of interior spaces. Correspondingly, a parallel exists between Un-Authored buildings and the materials and assemblies that facilitate the qualities of the spaces they are used to construct.

Implicated in the existence and use of this ubiquitously unavoidable vernacular are questions pertaining to the degree of agency that the architecture profession has in determining and controlling aspects of interior space beyond its geometry. The reality of factors including building code compliance, manufacturers' warranties, economies of scale and trade labor specialization make uncommon, or novel materials, a costly line item that can be at best an indulgence and at worst a liability. While the erosion of the architects' control and dominance can arguably be seen in many corners of the profession, from the growing need for specialists and consultants to the use of design software that contains catalogs of

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[4] Friedman and Krawitz, *Peeking through the Keyhole: The Evolution of North American Homes*, 81.
[5] A good example of this is the USG product literature and manuals. USG. The Gypsum Construction Handbook. 7th ed. Wiley, 2014.

standardized components, the default materiality that is produced from the use of drywall and drop ceilings is a phenomenon that exemplifies this condition in built form.[6] As the difficulty of managing a project's array of moving parts increases, the praise and recognition of architects who can maintain an exacting level of control has possibly only increased.[7]

Unpacking the relationship between generic materials and concerns facing contemporary architectural practice, this investigation aims to address the importance and relevance of this disregarded part of our built environment. Running in parallel to this investigation, the construction of full-scale installations, using generic materials, details and assemblies, was a means of understanding the materials properties and generating discourse and further investigations. Considering the individual components that comprise this contemporary vernacular, the installations explored the reality of the spaces that surround us and peripherally addressed the larger questions of control, authorship and agency that are manifested in generic materials and details.

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[6] Keith Bresnahan, "Design and Kenosis; Or, the Architect's Abdication," in *Architecture Is All Over*, ed. Esther Choi and Marrikka Trotter (New York, NY: Columbia Books on Architecture and the City, 2017), 58.

[7] In the forward of Building (in) the Future, Andrew Ross mentions this phenomenon "Ironically, as the practical influence of architects over the built landscape has dwindled, the cultural power of select high-profile designer names has skyrocketed. The bestowal of such a name as Viñoly, Gehry, Nouvel, Rogers, Piano, Foster, Hadid, Calatrava, or Koolhaas on an idiosyncratic building is now the anchor around which city managers try to engineer cultural districts…" Ross, "Foreward," , 09.

part one : in defense of gypsonia

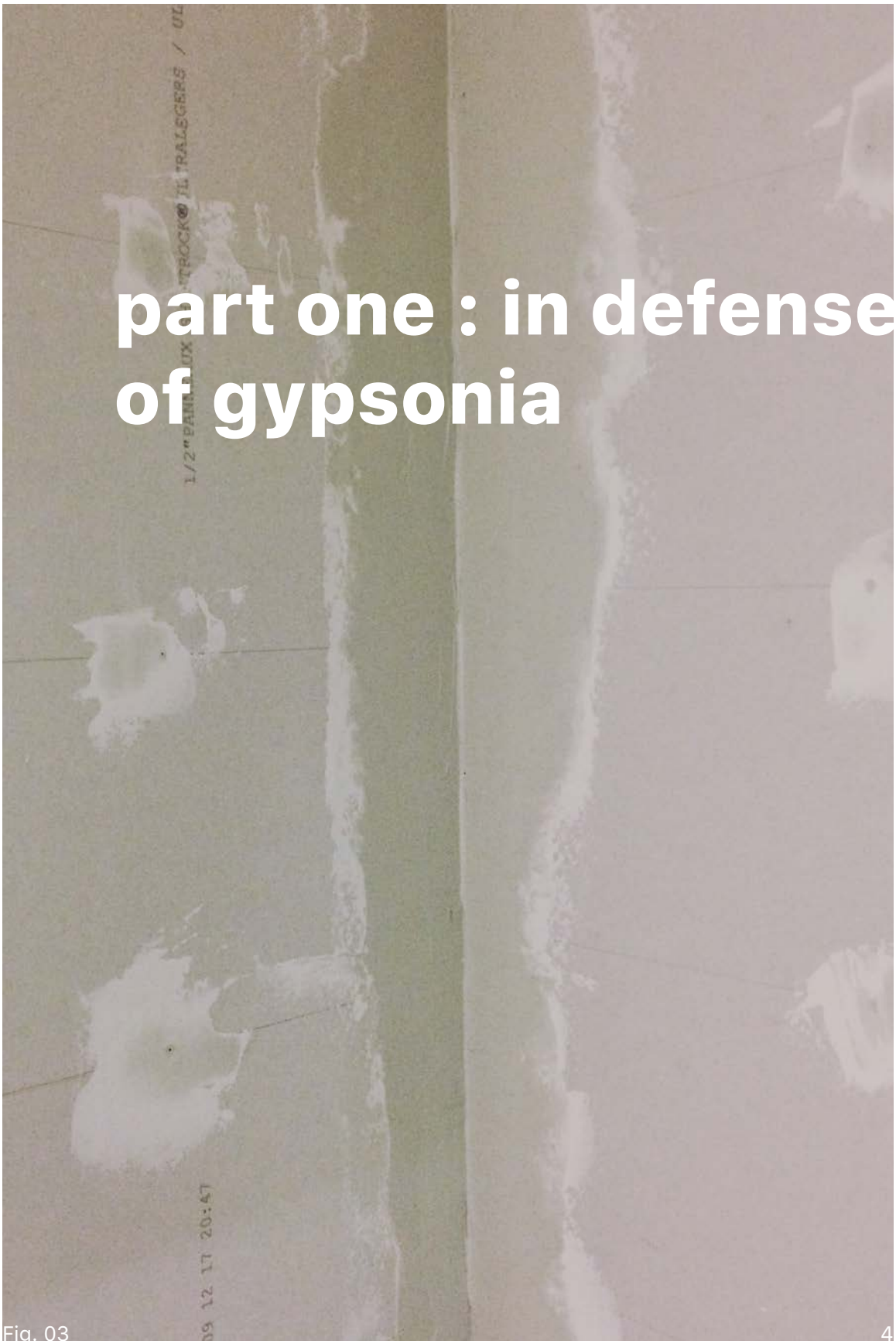

Fig. 03

Structural Implications

The grid system becomes a structural component in the ceiling. It must carry the loads of lighting, air distribution and ceiling panels in a safe manner. Through the hanger wires that suspend the ceiling, these loads are transferred to the building structure. The performance of the grid system is dependent upon the integrity of the product as well as its proper installation.

There are standards that must be met in order to assure the integrity of the installed ceiling. ASTM Standard C-635 governs the structural and quality standards of the grid. ASTM Standard C-636 provides for proper installation to assure the load-carrying and general structural integrity of the ceiling. Load compliance of CGC grid products is certified by Underwriters Laboratories Inc., per ASTM C635.

Ceiling Panels

The most commonly used panel sizes measure 610 x 610 mm (2′ x 2′) or 610 x 1220 mm (2′ x 4′) and are typically 15.9 mm (5/8″) or 19 mm (3/4″) thick. Although this is the nominal reference, the dimensions actually refer to the module size of the ceiling. Panel sizes, in fact, are 6 mm (1/4″) less than the module size in both directions.

CGC offers a full line of acoustical panels to achieve any functional or esthetic need. Selection can be based on varied parameters—texture, budget, acoustical performance, functional requirements, color, etc. For a complete guide, call your CGC representative, 1-800-565-6607, and ask for catalog information, or visit the CGC web site at www.cgcinc.com.

610 x 1220 mm (2′ x 4′) RADAR Illusion Eight/12 panel (left) uses face cuts to simulate smaller grid modules. Lightly textured 610 x 610 mm (2′ x 2′) Frost pattern panel is available with square-cut, Shadowline-cut or [illegible]

modernity to ubiquity

Fig. 04 5

modernity to ubiquity

Over a protracted period of time, the development of indoor plumbing and the enclosing of open sewers, started a process that would eventually cause modern buildings to contain cavity spaces.[8] This fundamental shift in construction technique from pre-modern solid construction to cavity wall and ceiling systems is entangled with the development of a variety of other technologies including artificial light, mechanical ventilation and telecommunications.[9] In the case of both drywall clad stud walls and suspended ceilings, the surfaces that bound our interior environments are now containers that are commonly filled with the aforementioned systems. This has created what Comaroff and Ker-Shing termed a "crisis of concealment" which, for many modern architects, involved a struggle to control, contain and hide mechanical and electrical systems in modern buildings.[10]

Given the commonly haphazard and reactive use of drop ceilings in contemporary buildings, the history of this system and its relationship to modernism and the International Style is not necessarily intuitive. Furthermore, in discovering the enthusiasm that surrounded the system's development, its initially innovative benefits now appear almost comedic in light of its contemporary existence. While this current apathy is in part due to a gradual process of acclimation, a common occurrence in regards to many modern day convinces, it is also indicative of the transmutation of ceilings as it shifted from a modern innovation to a generic product. Beyond any antipathy for suspended ceilings within the architecture discipline itself, the assembly's use, along with cubicles, as visual shorthand for monotony, primarily in the depiction of office space, has a certain cultural resonance due to its ubiquity and easily identifiable appearance.[11]

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[8] Joshua Comaroff and Ong Ker-Shing, *Horror in Architecture* (S.l.: ORO Editions, 2013), 129.
[9] Sheila Kennedy and Christoph Grunenberg, *KVA: Material Misuse* (London: AA Publications, 2001), 6.
[10] Comaroff and Ker-Shing, *Horror in Architecture*, 130.
[11] The film *Office Space* (1999) directed by Mike Judge provides a representation of this type of environment in a somewhat stereotypical depiction, that expresses generally its cultural associations.

Around the middle of the last century, before the emergence of modern componentized suspended acoustic ceiling systems, the gradual integration and influence of various new technologies started a process that would eventually transform the ceiling from a symbolic and decorative surface, often still suspended, to a technical plane that facilitates the delivery of various environmental controls.[12] One early example of a symbolic and historical ceiling being transformed to handle new functional necessities is the story of the House of Commons in Westminster told by Manfredo Di Robilant in *Ceiling,* which is one of 15 books in the AMOs elements series.[13] Robilant argues that the lowering of the House of Commons ceiling, in a renovation carried out only two years after its completion in 1852, to improve the acoustics, ventilation and lighting, was emblematic of the fundamental changes in the role of the ceiling that was to come.[14]

More closely linked to the development of the modern drop ceilings of the fifties are examples of the integration of lighting into the surface of ceilings that, according to Reynar Banham in *The Architecture of the Well-Tempered Environment,* occurs in the Johnson Wax Building (Frank Lloyd Wright 1936) and the Universum Cinema Berlin (Eric Mendelsohn 1928). This integration continued further with the Philadelphia Saving Fund Society Building (Howe and Lescaze 1932), which features integrated light and ventilation fixtures in the ceiling of its main hall.[15] Integrating lighting and ventilation systems into the ceiling acted as a first step in the development of suspended ceilings designed to conceal and in turn create cavity space for mechanical systems.[16] The necessity of covering steel structures for fire protection also contributed to the need for and development of suspended ceilings that were subsequently found to conveniently improve acoustics, and allowed for simple distribution of the services that were concealed above its surface. In the 1960s, the combination of steel structure, environmental controls and suspended ceilings was developed by the American School Construction Standardization Development (SCSD) and Ezra Ehrenkrantz leading to a

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[12] Banham, *The Architecture of the Well-Tempered Environment*, 195-219.
[13] Koolhaas, Rem, Irma Boom, Manfredo Di Robilant, and James Westcott, *Ceiling* (Venice, Italia: Marsilio, 2014), 353.
[14] Koolhaas, Boom, Robilant, and Westcott, *Ceiling*, 363.
[15] Banham, *The Architecture of the Well-Tempered Environment*, 212.
[16] Banham, *The Architecture of the Well-Tempered Environment*, 195.

type of universal space that could be used for a wide variety of programs.[17]

Even at this early point in the use and development of modern suspended ceilings, the resulting homogenization of space and the systems' reliance on a set of standardized manufacturers' components and finishes was met with opposition from architects of the time including Louis Kahn.[18] Kahn's interest in ceilings and the interaction and separation of served and services space, is visible in the case of the Salk Institute (1965) and the Yale University Art Gallery (1954). In the latter example, the development of a triangular concrete structure allowed for the integration of services while maintaining the exposed structure by inverting the typical ceiling assembly and using a non-structural acoustic floor above the ceiling. While this solution allowed for the integration of structure and services, it was not an economically viable method of construction and created challenges for servicing and maintaining the environmental systems.[19]

The case of Kahn's Yale Art Gallery ceiling raises a tension and debate regarding the use of suspended ceilings and the desire of many modernist architects to express honestly the structure and services that compose buildings. This can be seen in the ceilings of modernist homes of the era, which display at times smooth abstracted planer surfaces like the ones found in the 1951 Farnsworth House by Mies van der Rohe, or exposed steel decking and structure famously seen in the California Case Study Houses.[20] In the case of some International Style modernist projects, the concealment of plumbing and ventilation was paramount to maintain the illusion of abstracted environments, or light and transparency.[21] Regardless of any debate over modernist ideology, pragmatic considerations ultimately lead to the widespread use of componentized acoustic suspended ceilings for office environments. In the well-known examples of the Lever house

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[17] Iñaki Ábalos and Juan Herreros, *Tower and Office: From Modernist Theory to Contemporary Practice* (MIT Press, 2003), 142.
[18] Koolhaas, Boom, Robilant, and Westcott, *Ceiling*, 130.
[19] Ábalos and Herreros, *Tower and Office*, 140.
[20] Koolhaas, Boom, Robilant, and Westcott, *Ceiling*, 31.
[21] Comaroff and Ker-Shing, *Horror in Architecture*, 131.

(Skidmore Owings and Merrill 1951) and the UN headquarters (1950), the concealment of the mechanical services, on the interior and exterior of the building, can be seen as a template for how mechanical systems are commonly approached and how suspended ceilings continue to be used to this day.[22]

The story of partition walls and drywall shares similarities with the pragmatic development of suspended ceilings, but it is less implicated in the development of environmental controls. Instead, the partition is born less from the need to enclose space for plumbing and wiring in walls, although this is a useful and common practice, and more from the need for fireproof assemblies and economical interior partitions. This history is told in *Wall* (one of 15 books in the AMOs elements series) by Nicholas Potts in an article called "Chicago: Birth of the American Partition".[23] In this piece, Potts discusses the relationship between the great fire of Chicago in 1871 and insurance underwriters who helped to bring about, among other regulations, the use of plaster to protect steel and iron structures.[24] The World's Columbian Exposition in Chicago (1893) also played a role in the creation of modern gypsum board products due to the sheer quantity of gypsum used in the exposition. The resulting demand for gypsum acted as a catalyst for the creation of the United States Gypsum Corporation (USG) in 1902 and the eventual creation of the first gypsum board products. These new laminated gypsum boards replaced the use of labor-intensive lath and plaster construction with a standardized, economical and quick method of creating fireproof partition walls.[25]

In part due to the combination of longer span structures and the simple distribution of environmental controls that suspended ceilings allow for, the partition wall, clad in drywall, became the standard method for dividing space. The simplicity of its construction method, stud framing and drywall cladding, and its inherent fireproof and acoustic properties made this

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[22] Banham, *The Architecture of the Well-Tempered Environment*, 228
[23] Nicholas Potts, "Chicago: Birth of the American Partition," in *Wall*, by Rem Koolhaas and Irma Boom (Venice: Marsilio), 46.
[24] Nicholas Potts, "Chicago: Birth of the American Partition,", 49.
[25] Nicholas Potts, "Chicago: Birth of the American Partition,", 53.

assembly system and drywall the default choice for an innumerable number of different programs. In the case of residential architecture, the rise of stick framing during the postwar housing boom also resulted in drywall becoming the most common interior finish for walls and ceilings in new homes.[26] Furthermore, the assembly's ability to contain electrical wiring and plumbing, not to mention provide space for insulation, make the system a dominant type of construction for North American homes. [27]

Speaking generally about partition walls and drop ceilings, the necessity for fire protection played an important role in the initial adoption of these assembly systems and their continued prevalence. In addition, the development of new environmental climate controls created the circumstances for this type of hollow construction to become the dominant method of creating and finishing interior spaces. Beyond providing an explanation of the factors that allowed these materials to become so prevalent, the history of drywall and drop ceilings also speaks to a shift that has occurred as modernist era technologies transmutate in an attempt to exist in the imperfection of contemporary built environments. Assemblies and materials that were at one time an exciting development in the modernization of buildings, have slowly become emblematic of the unintentional role of these methods, or construction, in creating banal, uniform and generic interiors.

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[26] Friedman and Krawitz, *Peeking through the Keyhole*, 80.
[27] Kennedy and Grunenberg, *KVA: Material Misuse*, 6.

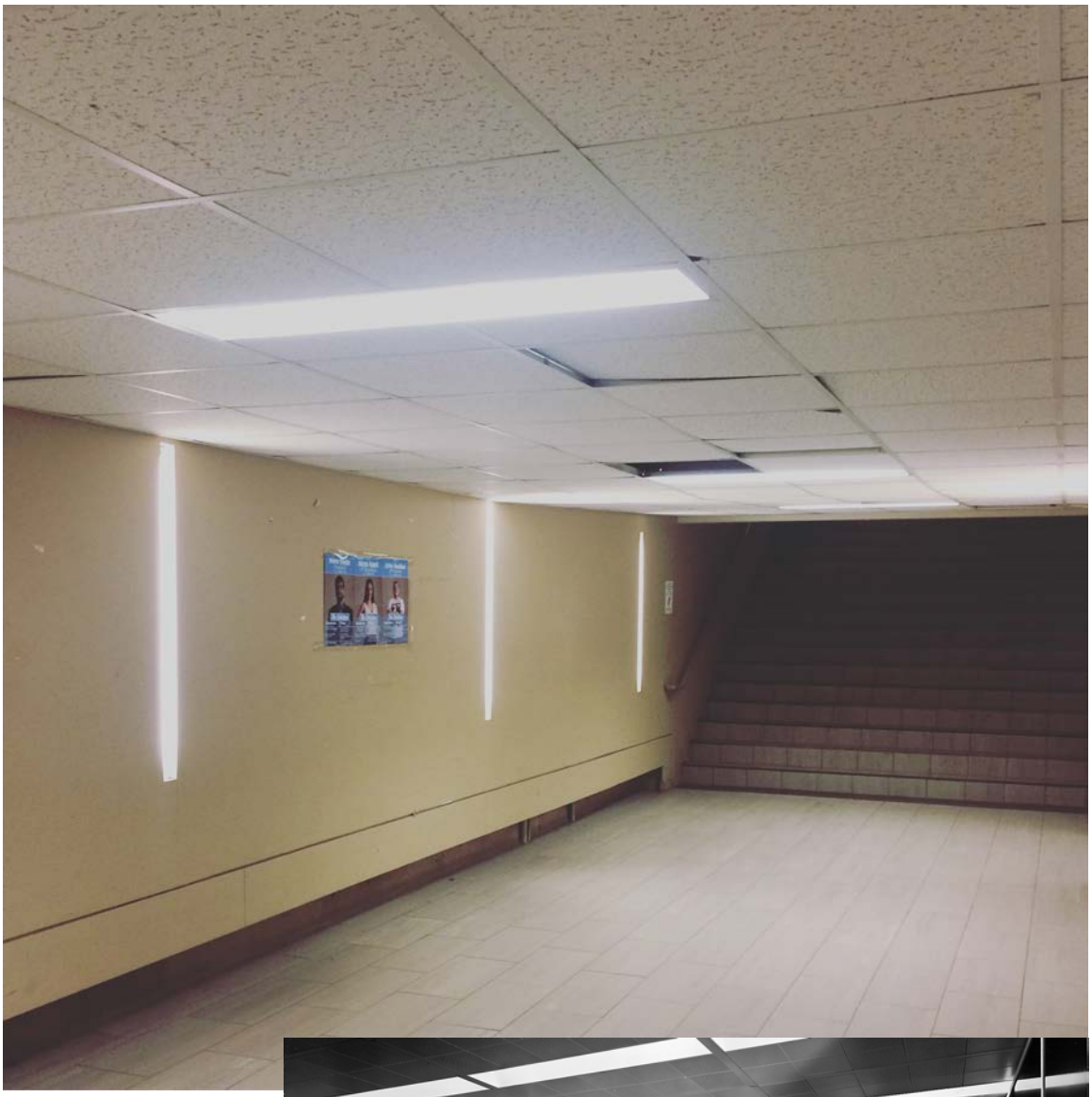

Fig. 05: [Top] Drop Ceiling in the University Centre, Carleton University 2018
Fig. 06: [Bottom] SOM Inland Steel Building Interior, 1958

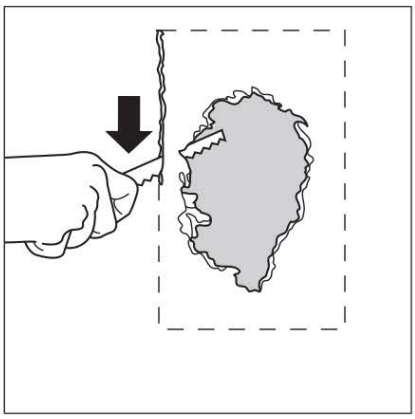

Fig. 6

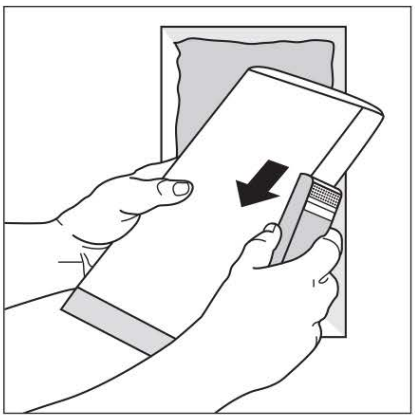

Fig. 7

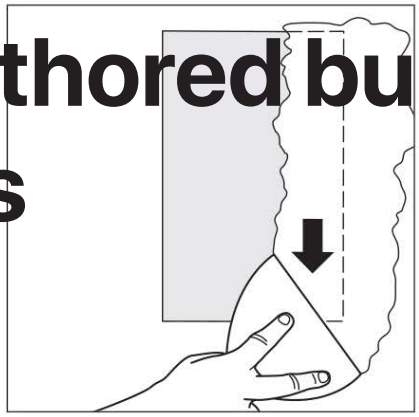

Fig. 8

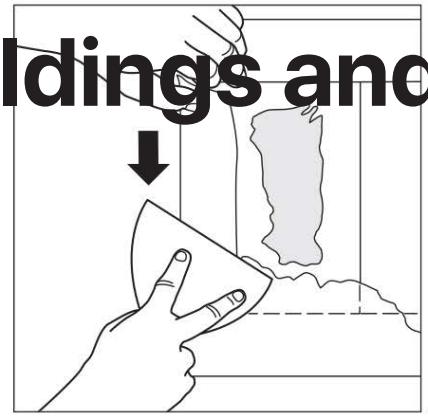

Fig. 9

Remedy 2: Cut a square-shaped or triangular section around damaged area, with a utility knife or keyhole saw (Fig. 6); use a rasp or sanding block to slope edges inward at 45°. Cut corresponding plug from sound gypsum panel, sand edges to exact fit (Fig. 7). Butter edges (Fig. 8) and finish as a butt joint with joint compound (Fig. 9).

Remedy 3: An alternate repair technique (sometimes referred to as "California patch," "butterfly patch" or "hot patch") involves cutting a corresponding plug approximately 38 mm (1-1/2″) wider and longer than the cutout in the wall. Next, score through the back paper and core, snap the core and then peel the core away from the face paper so that an overlapping section remains around the perimeter of the plug. The plug is then edged with joint compound and inserted into the damaged area, and the overlapping face paper is used in lieu of tape for finishing with joint compound. Although this may be an acceptable

Fig. 07

un-authored buildings and details

An important premise in investigating the implications of generic building materials on the contemporary practice of architecture is the argument that, at the scale of individual buildings and details, the use of standardized details and components is indicative of an abdication of control over the design of the building. The relinquishment of the profession's engagement with materials and details, and selecting products from catalogs, is the result of a shift in the role of the architect from master builder to facilitator, manager and coordinator.[28] The implications of this can be experienced in the chaotic and mundane environments of many buildings that result, not from the work of an individual or discrete group, but from a complex interaction of a disparate set of stakeholders, regulators and specialists. In the face of the specialization and fragmentation of design and construction, the authorship of a building can no longer be easily attributed to the work of the architect alone.[29] In the case of many buildings and facilities, the use of generic materials and manufactured details ultimately results in spaces with an anonymous quality and buildings that are arguably un-authored. Defining the term un-authored in relation to buildings and details is in part a process of understanding the circumstances that create mundane spaces and buildings. Looking first at the qualities of un-authored spaces, its constituent material and details act as a means to understand the factors that generate these spaces and the subsequent relevance of these factors to the discipline. This pseudo forensic approach will attempt to link the built reality of our environments to the current crisis of control and agency in the architecture discipline.

An important touchstone in considering the conditions of our contemporary built environments, and the methods, materials, and factors that have created it, is the work of Rem Koolhaas and in particular his essay *Junkspace*. In this work, Koolhaas lovingly details the conditions of market driven spaces and the emergence of phenomenon like transient detailing,

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[28] Bresnahan. Design and Kenosis; Or, the Architect's Abdication, 57.
[29] Andrew Ross, "Foreward," in *Building (in) the Future: Recasting Labor in Architecture*, ed. Phillip Gordon. Bernstein and Peggy Deamer (Princeton Architectural Press, 2010), 09.

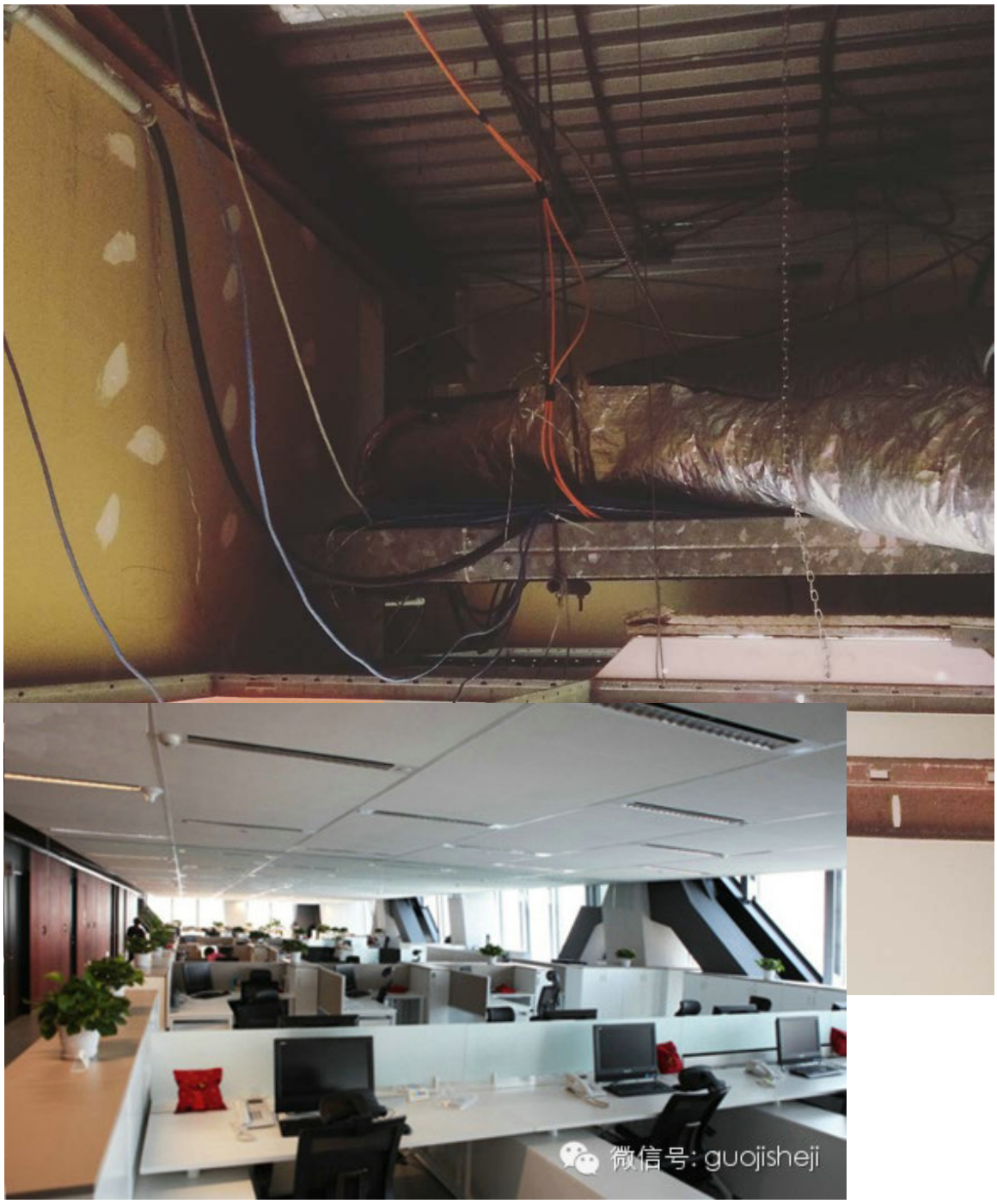

Fig. 08: [Background] Cavity space, 5th floor Architecture Building, Carleton University
Fig. 09: [Foreground] Leaked image of CCTV interior, OMA

irrational trajectories and conditioned conditional space.[30] The compromised spaces that are contained under the broad catchall of Junkspace include the type of banal materiality of drop ceilings and drywall, but also extend to encompass a whole cacophony of other materials and strange situations. Beyond simply a fetishistic description of the inherent strangeness and absurdity of the built environment, the discussion of the tectonics and an associated new set of verbs (clamp, glue, fold and tape) address the fundamental implications of these spaces on the practice of architecture.[31] Furthermore, the qualities of these spaces are explored in relationship to globalization, modernism and the broader social implications of these un-authored spaces. In terms of the scope of this thesis, Junkspace deals with a broader set of conditions that extend outside of the realm of drywall partitions and drop ceilings, which arguably maintain a type of universal stature due to the ability to use these materials to talk about a whole host of non-specific spaces.

The spatial qualities that result from un-authored buildings and details can be described as a type of compromised space that is born from the impermanent and disposable quality of contemporary buildings. Within these places, detailing is a reactionary response to an accumulation of systems and renovations, a detailing of happenstance, in which surfaces of drywall and acoustic tile are contorted to create and conceal a hollow labyrinth of cavities. The dominant narrative of compromised space is a pragmatic story of code compliance and problem solving that gives rise to odd conditions as buildings acquire additions and grow over time. While at the scale of individual buildings, the formal particularities of these spaces are not necessarily standard, a normalized pallet of materials, finishes and detailing becomes a unifying force that renders the specifics of the space inconsequential. This homogenization of the space can be understood most clearly at the scale of the individual manufacturer's specified details that are used with mass produced generic building materials.

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[30] Rem Koolhaas, "Junkspace" (2000), in *Constructing a New Agenda: Architectural Theory* 1993-2009, ed. Krista Sykes (New York, NY: Princeton Architectural Press, 2010), 144, A U Special Issue: OMA @ Work.
[31] Rem Koolhaas, "Junkspace", 140.

The work of Marco Frascari and Michael Cadwell, in their respective article and book, *The Tell the Tale Detail* and *Strange Detail*, provides a framework for reading not only the pragmatic consequences of details, but also their relevance and implications in construing cultural and contextual meaning. In both texts, the work of Carlo Scarpa is cited as an example of the masterful use of unique and strange details that contain a discernible connection to the history and traditions of Venice. Scarpa's details show evidence of his close working relationship with local trades and industry and contain this context within the story that his details tell.[32] This same approach can be taken with standardized details. A narrative can be read in the details that tell the story of contemporary building practices in a globalized context. Parallels can be drawn between un-authored buildings and standardized details that show how generic materials and assemblies facilitate and reflect the qualities of compromised interior spaces. The hollow, pliable and ultimately disposable nature of these assemblies is what allows the layered accruement of additions, modifications and facelifts that in turn create an unstable, banal complexity of space and materiality.

A large component of the banal materiality of un-authored buildings and compromised space is the use of standardized components. As a set of building materials that are consumer products, this contemporary vernacular exists in the cultural context that led to its creation.[33] This understanding of building materials as a series of manufactured products, also speaks to the complexity of buildings that must create environmental controlled spaces.[34] Building materials as products are as a result, often marketed as solutions to these challenges and have created a new system in which architects deal with choosing materials and assemblies from catalogs.[35] In modern times, this lack of control over detailing is often more related to the specialization of professions and trades. This in turn creates a situation in which the fractured production of buildings destroys any notion of a unified whole in which control can be maintained. This reality has

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[32] Michael Cadwell, *Strange Details* (Cambridge, MA: MIT Press, 2007), 13.
[33] Kennedy and Grunenberg, *KVA: Material Misuse*, 16.
[34] Stephen Kieran and James Timberlake, *Refabricating Architecture: How Manufacturing Methodologies Are Poised to Transform Building Construction* (New York, NY: McGraw-Hill, 2004), 29.
[35] Kieran and Timberlake, *Refabricating Architecture*, 30.

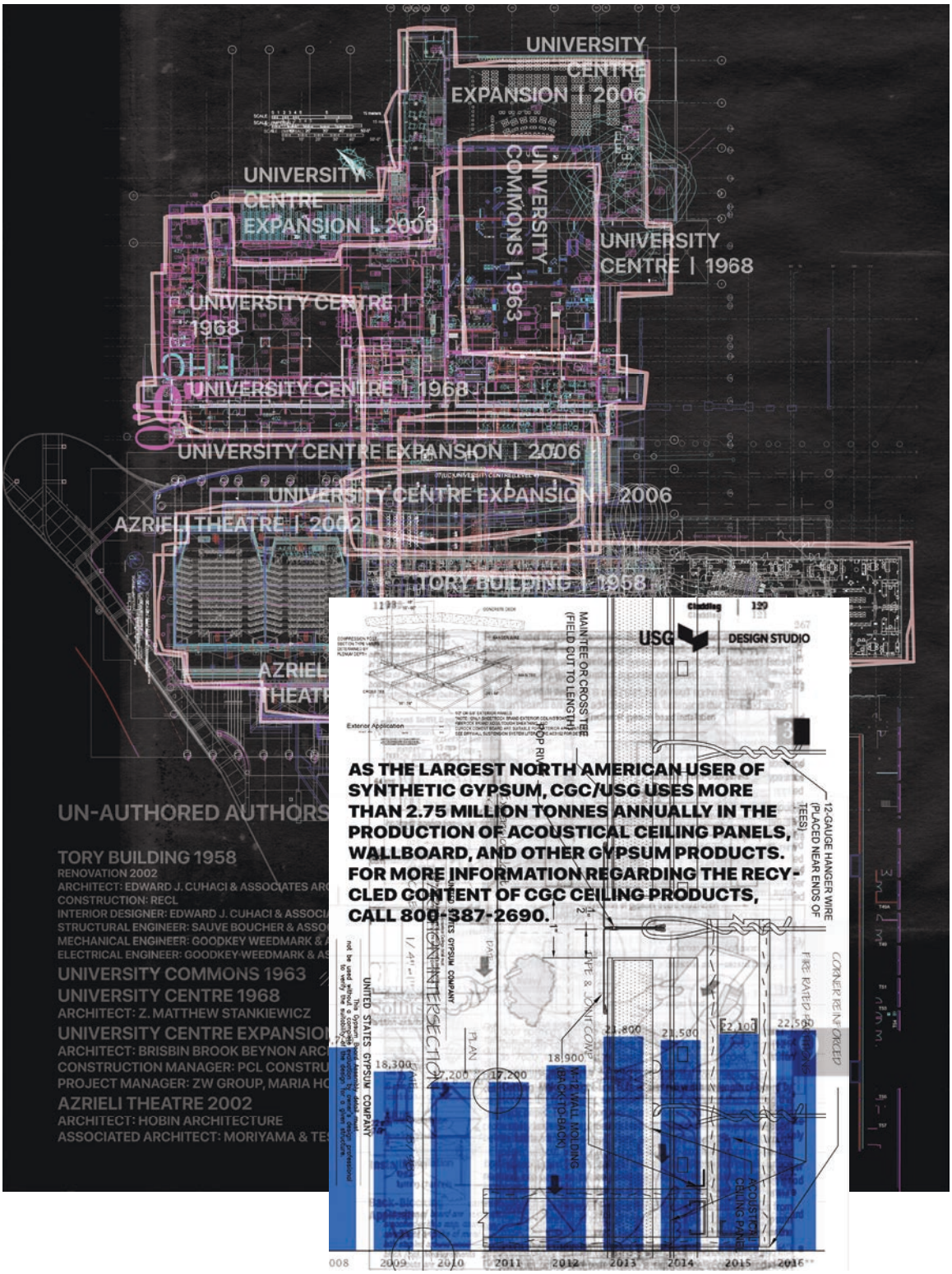

Fig. 10: [Background] Layered CAD floor plans, University Centre, Carleton University
Fig. 11: [Foreground] Layered Pages from USG Handbook and other promotional material

eroded any naive dream of creating the kinds of *Gesamtkunstwerk* (total work) in which all elements of a space are design and unified, in keeping with the long-standing aim of the profession to operate in the tradition of the master builder.[36] Compounding the situation, the use of manufactured building materials and systems also implicates the legal requirements of warranties that stipulate a specific use and method of detailing a product in order to maintain said warranty. While contemporary examples of architects exerting control and developing new materials do exist, this practice is typically only feasible for a small minority of high profile, high budget building projects.[37] For most buildings, standardized materials function as a set of interchangeable and somewhat arbitrary consumer products that dictate the temporary materiality of a space.[38] The plate of our interior environments is ultimately limited to choices of assemblies, systems and material finishes that are outside of the disciplines' control.[39]

The use of details as a means of controlling methods of construction can be seen as a result of the separation of architect and builder.[40] This separation charts a shift from the architect as master builder, involved in all aspects of building and construction on site, to a designer of drawings that specify the construction methods and finally a selector of products with predetermined specifications. The implications of this fragmented process of design and construction can be seen in an equally disparate set of responses by practitioners dealing with this lack of agency. This ranges from "pragmatist" design practices that willingly accept the parameters of standardization and convention as an indisputable reality of construction to firms like MVRDV who see these parameters as the basis for a new model of date driven parametric architecture practice that retains some elements of control over

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[36] Frampton discusses the term *Gesamtkunstwerk* in regards to the work of Henry van de Velde. Kenneth Frampton, *Modern Architecture: A Critical History* (London: Thames & Hudson, 1980), 96.
[37] Federica Goffi brought to my attention Peter Zumthor's 2000 'Kolumba ™' brick patent, which was created in collaboration with Petersen Tegl and used for the Kolumba Museum in Koln."Petersen Kolumba™ - the original handmade," English, , accessed April 12, 2018, http://en.petersen-kolumba.dk/.
[38] Kennedy and Grunenberg, *KVA: Material Misuse*, 16.
[39] Kieran and Timberlake, *Refabricating Architecture*, 31.
[40] Marco Frascari, "The Tell-the-Tale Detail," in *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*, ed. Kate Nesbitt (Princeton Architectural Press, 1996), 503, VIA 7: The Building of Architecture.

the mitigation of constraints.[41] The role of architecture software, in this case parametric design tools, raises a question about the search for a defensible position in the face of a myriad of software-generated permutations. This use of parameters or constraints, as a means to defer the total responsibility for a given outcome, creates a situation in which the authorship of a project is in theory an instance of subjectively selecting from a series of various outcomes. At the other end of the ideological spectrum of the architectural software, programs like Revit, while still parametric, have institutionalized the practice of selecting materials, assemblies and building products from menus. The upstream effect of this is to further embed the use of standardized components into an earlier phase of the design process. Regardless of the acceptance, enthusiasm, or complacency of varying responses to this new paradigm, the architect's current role as a selector and coordinator of mass produced products brings the job description uncomfortably closer to that of an administrator than any traditional definition of a master builder.

In the case of homogenized interior spaces that are characterized by the use of standardized material finishes, a disconnect can be seen between the architect and the development of materials and assemblies. Due to the complexity of modern buildings and the myriad of associated environmental systems, the scope of the architect has been curtailed by the specialization of the profession and the ensuing slew of legal considerations.[42] Returning to drywall and acoustic ceiling tiles, and their associated assembly systems, the pervasive use of these materials is an indication of the architect's narrow field of operation and brings into question the professions' ability to determine the qualitative features of a space besides its plan and basic geometry. The banal materiality of the contemporary vernacular of generic materials is telling, not of bad taste, but of the convergent legal, regulatory, economic and tectonic complexities of modern buildings that are manifest in un-authored details.

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[41] Bresnahan. Design and Kenosis; Or, the Architect's Abdication, 58.
[42] Kieran and Timberlake, *Refabricating Architecture*, 29.

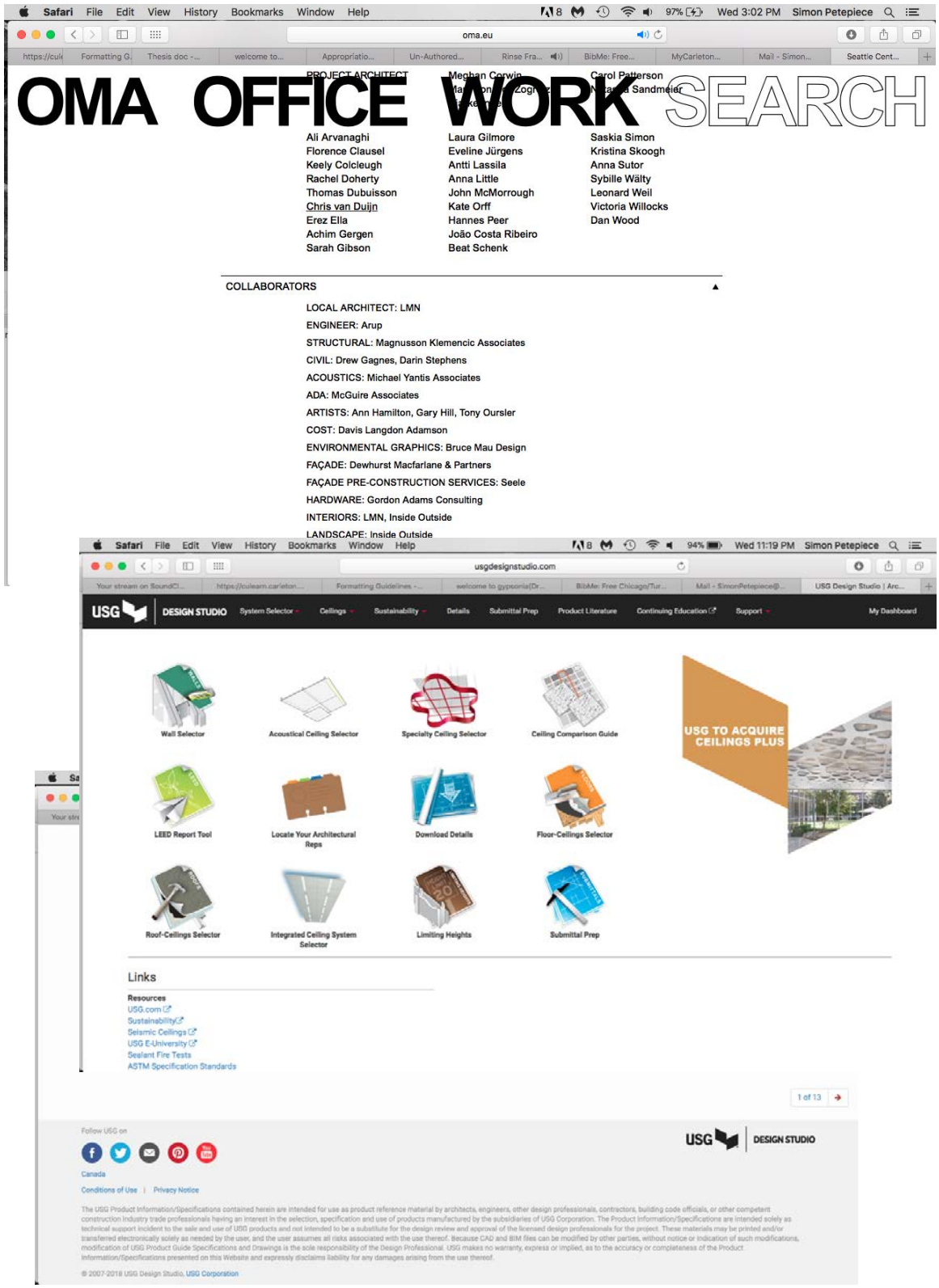
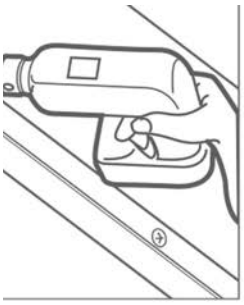


Fig. 12: Layered screenshots of OMA.eu showing list of contributors for the Seattle Central Library and USG.com showing standardized manufactures details



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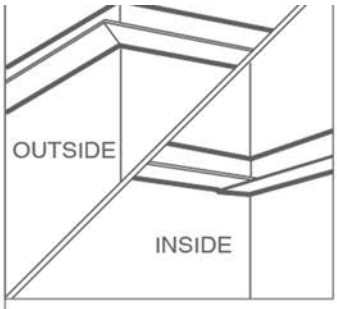
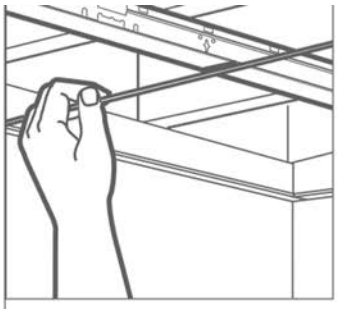


Cut the corners.
At outside corners, miter wall angles to 45 degrees. At inside corners. cut angles to 90 degrees and butt together.



Mark tees. Stretch string across the room at each main-tee location. Stretch one string perpendicular to mark the first row of cross tees. (Main tees have pre-punched slots that will align the remaining cross tees.)

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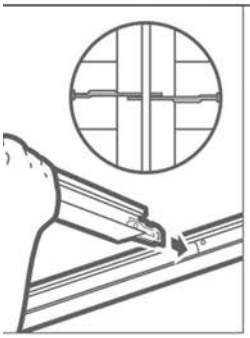
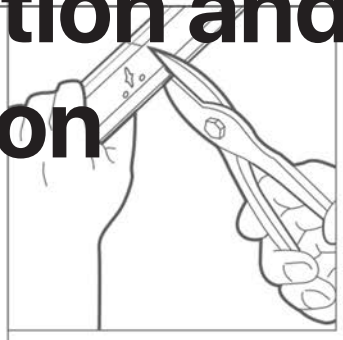


ll cross tees.
: tabs into slots in
ain tee. Where
ross tees occupy

To remove a cross tee, push up on the main tee and twist away until the cross

Cutting Tees



Cutting tees is easiest with metal snips. First, cut the bulb and stem, then bend the tee at

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Fig. 13

appropriation and intervention

Given the pervasive use of drywall and acoustic ceiling tiles, there is little evidence of critical engagement with these materials and conditions within the profession.[43] While the work of OMA and Rem Koolhaas does provide examples of the intentional use of these materials, it is arguably, mostly an exercise in aestheticization. In a fine art context, the use of drop ceilings by the artist collective BGL (Jasmin Bilodeau, Sébastien Giguère, and Nicolas Laverdière) shows how the ceiling assembly can be used to evoke a range of cultural associations. Similarly, 6a Architects' use of steel studs, in an exhibition design, references the materials' industrial produced qualities and plays on the same idea of using the cultural associations of conventional materials. As a whole, these examples of intentional and non-conventional uses of generic building materials highlight a series of different approaches that are relevant in setting up the methods used in the second part of this thesis. While the subsequent discussion of the use of generic building materials will reference concepts that are found in fine art and fashion, it will attempt to maintain a focus on architecture. Following this discussion, the idea of intervening on found conditions is purposed as an alternative method of addressing and commenting on contemporary interior environments. The idea of interventions is subsequently explored as a means of authoring existing "finished" conditions using the concepts of un-finishing and de-familiarization. Finally, the idea of minor architecture is offered as a model for thinking about how these interventions can address, peripherally, the professions' diminished agency.[44]

It is also important to mention the role that *Learning from Las Vegas* has played in my initial thinking around the investigation of generic materials. Venturi's, Brown's and Izenour's concept of the decorated shed and their arguments for the validity of ornamentation and suburban iconography were

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[43] Not discussed is Peter Eisenmann's use of acoustic drop ceilings in the Aronoff Center for Design and Art at the University of Cincinnati. In this example he plays with altering the grid of the ceiling system, conforming it to the geometry of the building, but the material itself is untouched. Federica Goffi provided images of the ceiling after a visit to the building in 2018.
[44] Jill Stoner, *Toward a Minor Architecture* (Cambridge, Massachusetts: MIT Press, 2012), 16.

particularly relevant, not to mention the repositioning of these phenomena in relation to a critique of modernist principles.[45] Their approach aided my thinking on the unique qualities of generic building materials and how to investigate found conditions as a means to understanding this contemporary vernacular.

Starting with the work of 6a Architects, the design of a travelling exhibit called *The World of Charles and Ray Eames* shows a subtle but effective variation on a conventional use of steel stud partition walls. While fundamentally using the steel studs in a typical way, the simple move to leave the walls one sided allowed the materiality and repetitive rhythm of the studs to lend the exhibition an unmistakably industrial quality. The firm cited Eames' own interest in mass production as the basis for the use of one-sided walls that create a link between their design and the exhibitions' subject matter.[46] In addition to the simplicity of the gesture, the conventional use of the assembly system allowed for the simple manipulation of the exhibit for different spaces, as well as quick assembly and disassembly. The Montreal collective BGL's use of drop ceilings is another example, in my reading of the work, of the use of an assembly system for the intrinsic cultural associations that are related to standardized, mass produced materials. In the work Domaine de l'angle 1 & 2 (2006, 2008), the use of a conventionally assembled drop ceiling placed in an alley and forest, creates an incongruity that allows the ceiling to become an expressive object. In both of the previous examples, the use of the generic materials is for their associated references, while maintaining a somewhat conventional use of the assemblies.

In the case of OMA, the use of generic materials happens in the context of a broader interest in unconventional materials that are not necessarily common, or generic. In regards to generic materials, a number of examples show how the materials become appropriated and re-contextualized in a process that results in an aestheticization of the materials. The idea of

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[45] Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas* (Cambridge, MA: MIT Press, 1977), 87.
[46] "6a Architects – The World of Charles and Ray Eames," 6a Architects, , accessed April 11, 2018, http://www.6a.co.uk/projects/more/the_world_of_charles_and_ray_eames.

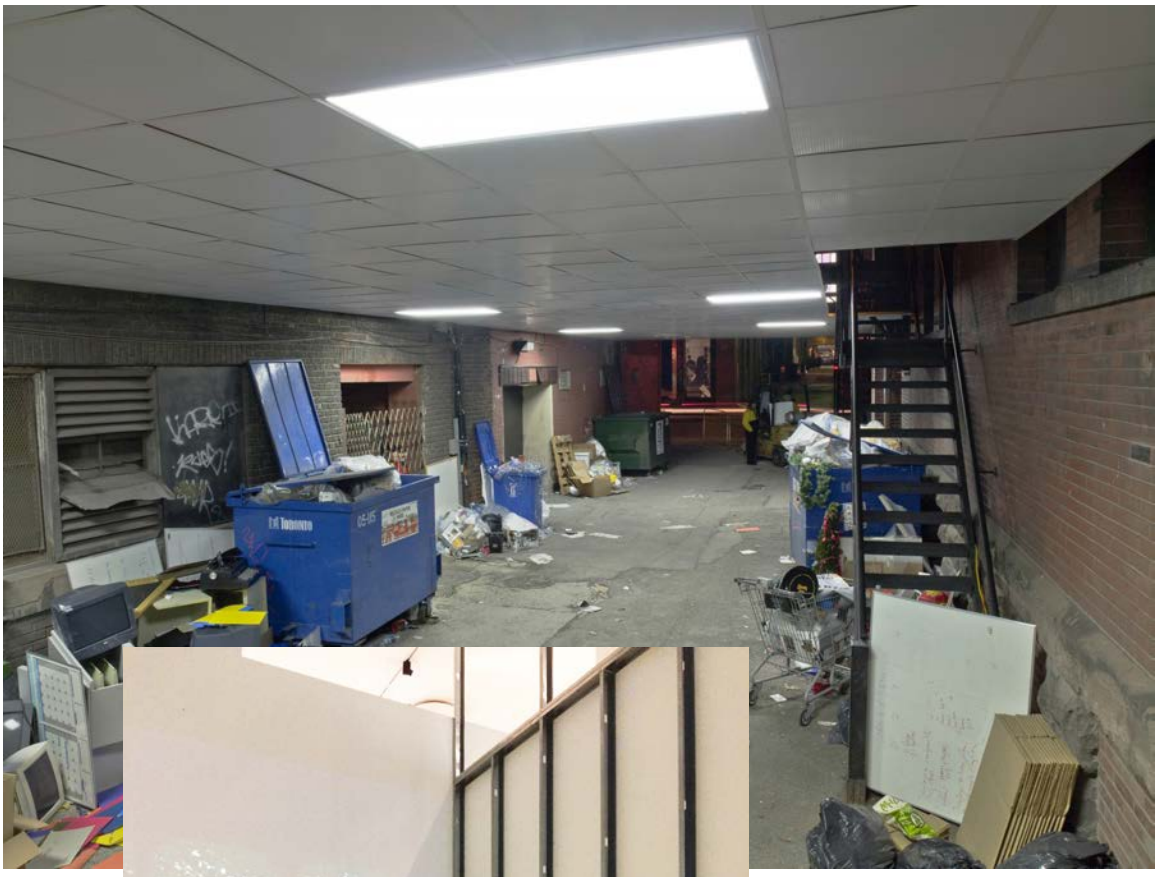

Fig. 14: [Background] BGL Domaine de l'angle II, 2008
Fig. 15: [Foreground] Images of The World of Charles and Ray Eames exhibit at Maat, Lisbon

appropriation brings up a related term in fashion called Normcore. This recently coined term, of uncertain etymological origins, is broadly used to describe a trend in fashion of appropriating common, plain and generic pieces of clothing, that could be found shopping at Walmart, for example. While appropriation in fashion is a common and cyclical occurrence, Normcore's association with common, generic and nondescript products creates a useful parallel in discussing the re-appraisal of materials like drywall and drop ceilings. In terms of clothing, the distinction between source material and a "new" aesthetic is often created by changing the context in which an outfit is presented. A nuanced balance is required that allows for the appropriated aesthetic to maintain its identifiable reference while being sufficiently altered, or re-contextualized, to signify that it is a self-aware act.

The same process occurs in a number of OMA buildings that display appropriation of generic building materials, processes and assemblies. In the Seattle Central Library (2004) an internal window from an escalator to an adjacent room is created by smashing a hole in the drywall to expose the steel studs and hollow void of the partition wall. Unpainted drywall with mudded joints are used as the interior finish of both the ceiling of the IIT McCormick Tribune Campus Center (2003) and walls of the Prada Epicenter (2001) in New York.[47] In these examples, a re-contextualization takes place in which the appropriated material is presented within a larger environment of highly controlled and bespoke materials and details. While it is possible to create an interesting dialogue by appropriating, or re-contextualizing reference material, it is at the risk of simply creating an aesthetic reappraisal, or even an ironic gesture. This is most profoundly seen in the case of the unpainted drywall with mudded joints that is found in the basement of the Prada Epicenter in New York. Paul Goldberger, in his book *Building Up and Tearing Down,* reveals that "Koolhaas preferred the color of a British gypsum that wasn't thick enough to meet New York City fire laws, so the wall is actually a veneer over another wall. An imported veneer, no

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[47] Gargiani mentions that Frank Gehry had previously used sheetrock in a similar way to Koolhaas. Roberto Gargiani, *Rem Koolhaas/OMA: The Construction of Merveilles* (Lausanne: EPFL Press, 2011), 250.

Fig. 16: [Background] Interior cavity wall window, Seattle Central Library, OMA
Fig. 17: [Foreground] Unpainted drywall ceiling, IIT McCormick Tribune Campus Center, 2003, OMA

less." [48] The unfinished drywall in this case is really a highly finished material that is not meant to be altered, an extreme example of the transformation of a generic material into an arguably bespoke finish. In these examples, the appropriation of generic materials, by positioning them in a new context, has a limited implication in regards to the space that is entirely constructed out of generic building materials.

Intervention, in contrast to appropriation, suggests an operation carried out within an existing context, or in a found condition. As opposed to the aforementioned examples of re-contextualization, interventions are purposed as a means of exploring the possibilities of the spaces described in the previous section on un-authored buildings and details. The idea of intervening on existing spaces is related to the second half of this thesis that explores a series of built installations that act as interventions. The aim of the installations was to identify and reveal the unique qualities of un-authored spaces and address the implications of these materials and assemblies. While a more specific explanation and description of particular installations follows in the second half of the thesis, the idea of un-finishing and de-familiarizing are important to establish what is meant more specifically by interventions in existing spaces. Speaking generally, un-finishing relates to the idea of generic materials, assemblies and details being used to create "Finished" spaces. These Finished spaces have finishes and qualities that come predetermined by the products being used. The idea of un-finishing is a way of authoring a generic, un-authored, material through intervening and altering it. This altering of the material, in a legal sense, creates a new type of authorship by voiding the manufacturers' warranties and, as a result, taking back liability and ownership. De-familiarization on the other hand is related to an interest in making visible the conventional use of these assemblies and materials. This is done paradoxically by subverting the intended use of a material and creating absurd conditions in which the material is no longer functional. The de-familiarization of common, or familiar materials creates a strange condition where the alteration of the material makes its normal condition apparent.

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[48] Paul Goldberger, *Building Up and Tearing Down: Reflections on the Age of Architecture* (New York, NY: Monacelli Press, 2009), 124.

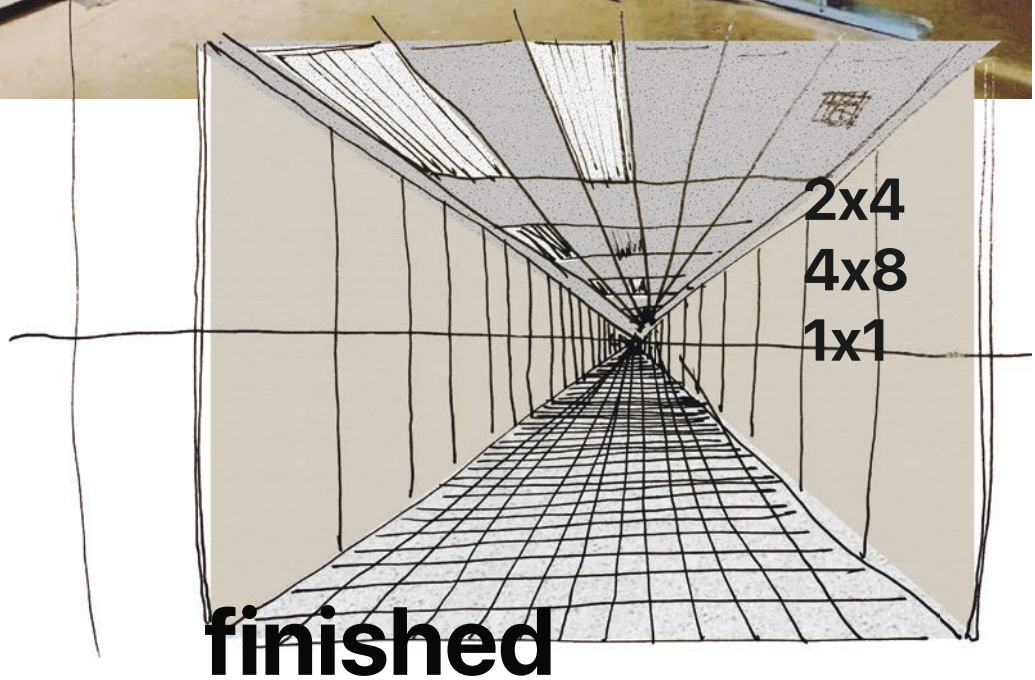

Fig. 18: [Top] Disassembled components from open corner installation
Fig. 19: [Bottom] Sketch of “finished” space

Working in this capacity on existing conditions suggests a link between the previously discussed methods and the ideas of minor architectures and the kenotic designer.[49] In the cases of minor architects, the diminished role of the architect allows and leads to alternate methods of carving out a marginal space of operation that is in opposition to the global systems of capital that have created this space.[50] Minor architectures as Stoner explains "-operate through verbs, not nouns. Provoked by desires for resistance, fragmentation, and opposition, they may be mobilized within buildings that are underutilized or diminished by real or perceived obsolescence." (16)[51] Similarly, in regards to the idea of self-reinforcing systems, Bresnahan argues that "-those architects and designers who are today abdicating a fantasy of mastery in favor of submersion in the banal givens of software presets, standard elements and the minute particulars of site and budget may be opening up a space of possibility for thinking otherwise, from within the "realities" of contemporary practice itself."(64) [52] In this context, the installations in the next section of the thesis operate as interventions in a space that exists in the shallow depths of generic materials. This marginal space, while at times only a surface, can still be utilized to un-finish and de-familiarize the received materiality of un-authored spaces.

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[49] Bresnahan uses the term kenotic designer after a discussions about the doctrine of kenosis in christian theology. Keith Bresnahan, "Design and Kenosis; Or, the Architect's Abdication," in *Architecture Is All Over*, ed. Esther Choi and Marrikka Trotter (New York, NY: Columbia Books on Architecture and the City, 2017), 61. Minor architecture is Jill Stoners concept. Jill Stoner, *Toward a Minor Architecture* (Cambridge, Massachusetts: MIT Press, 2012), 16.

[50] Jill Stoner, *Toward a Minor Architecture* (Cambridge, Massachusetts: MIT Press, 2012), 16.

[51] Stoner. *Toward A Minor Architecture*, 16.

[52] Keith Bresnahan, "Design and Kenosis; Or, the Architect's Abdication," in *Architecture Is All Over*, ed. Esther Choi and Marrikka Trotter (New York, NY: Columbia Books on Architecture and the City, 2017), 64.

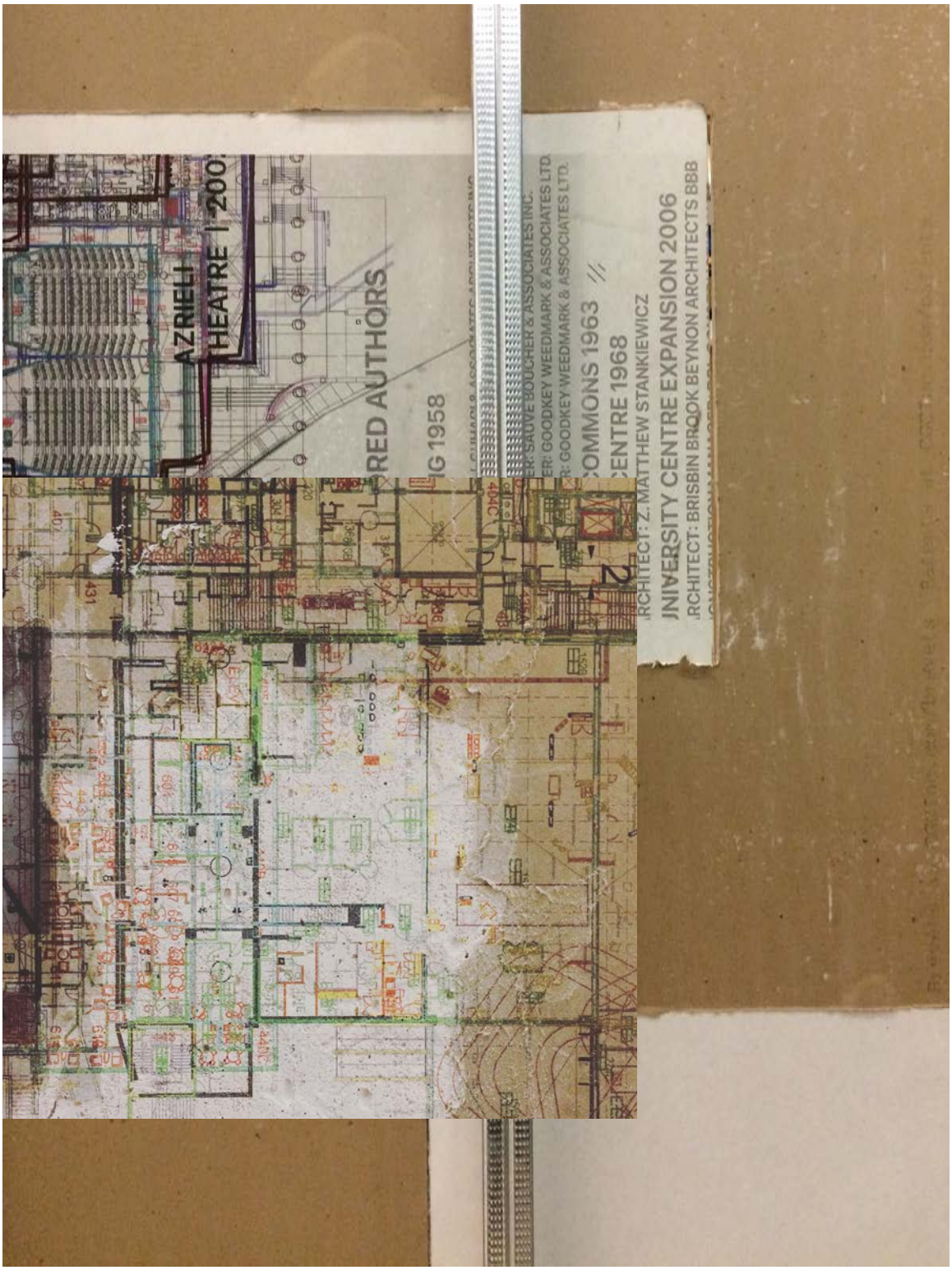
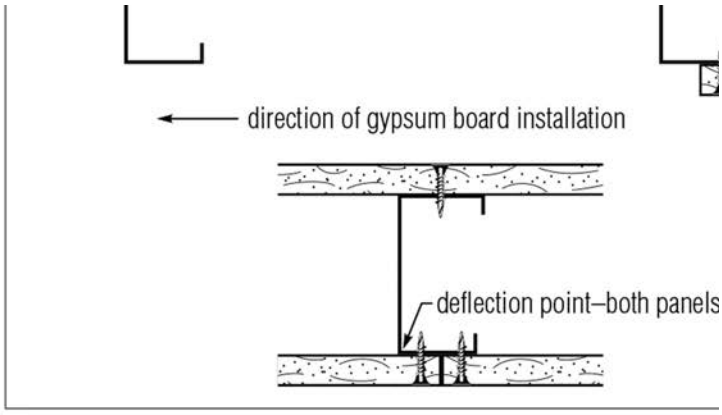
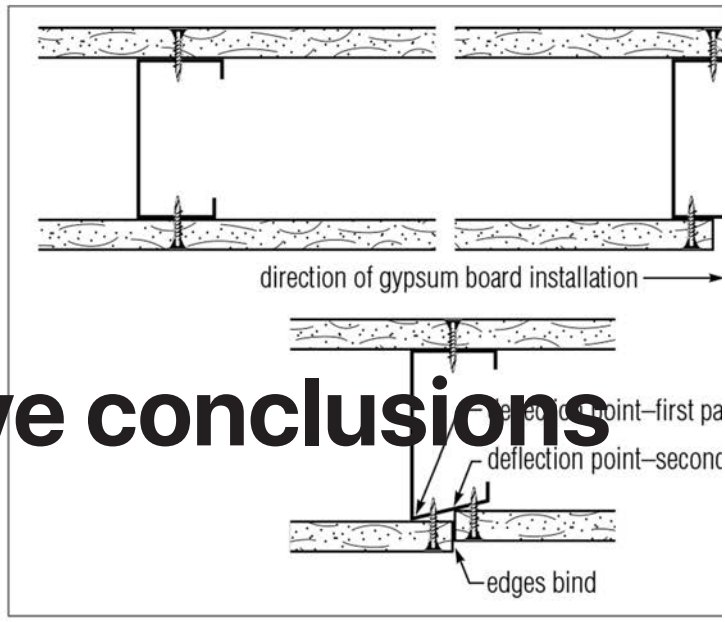


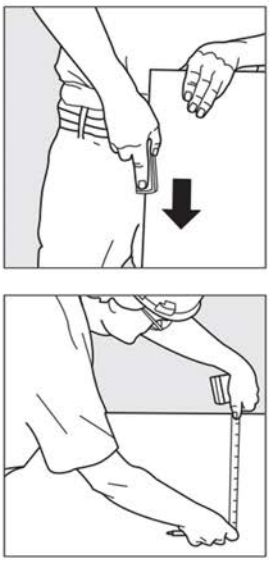
Fig. 20: Drawings printed on Drywall



Incorrect application



preemptive conclusions



Cut edges of board are smoothed with a rasp, coarse

door openings that are out of plumb or out of square. The corrections can be made before the board is hung. A 3660 to 7620 mm (25′) steel power tape is recommended. measuring and cutting are shown in Chapter 14.

Cutting Make straight-line cuts across full width or length c scoring the face paper, snapping the board core and then back paper. The common tool used to score and cut gypsu a utility knife with replaceable blade. Regardless of the type its blade should be kept sharp so that score will be mad paper without tearing or rolling it up, and into the gypsum FIBEROCK Brand Panels, several cuts may be required on pa and into core; no cut on panel back is required, unless c High Impact (VHI) panels.

Note that installation of FIBEROCK Brand products sometimes the procedures used to install conventional drywall panels a

Fig. 21

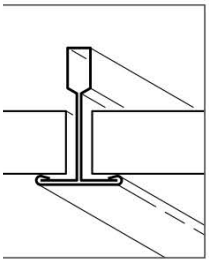
preemptive conclusions

In the previous sections of the thesis, the discussion of a contemporary vernacular of generic materials has been carried out with the aim of defending their investigation. Situating these mass-produced building materials in relation to the factors that led to their widespread adoption, the implications of these materials can be made explicit. The argument for the importance and relevance of generic materials, while not endorsing the spaces and conditions that result from their use, challenges a tendency to disregard this segment of our built environment and overlook its peculiar and unique qualities. It suggests that we must work with this received materiality as a means of creating an opportunity to reimagine its pervasive implementation.

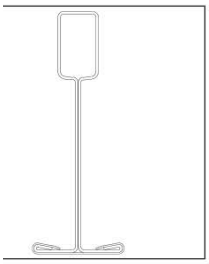
In the next section of the thesis, the qualities and functionality of drywall clad partition walls and suspended acoustic ceilings are investigated by working with the materials to create installations. This engagement with the materials is an attempt to operate within the existing conditions of un-authored buildings and details. While the following descriptions and reflections on the outcome of various installations, are narrow in their individual scope, they collectively offer a range of ideas and thinking that relates to the first half the thesis. No overarching conclusion follows this discussion of the installations and instead the built work acts not as a conclusion, but as an un-finished and open-ended response. I offer these thoughts as a preemptive conclusion, with the aim that part two of the thesis be read as a dialogue with the first section.

part two : installations as interventions

Fig. 22

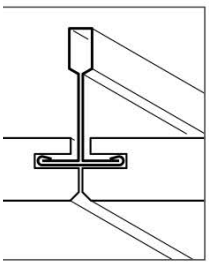


DX

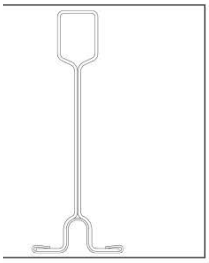


Centricitee

Fineline



DX Concealed



Meridian DXM

Fig. 23

Donn DX Suspension System is an exposed 24 mm (15/16″) wide face grid. It is the most commonly used suspension system. Note that exposed face grid products are typically differentiated by the width of the exposed portion and/or by reveals in the exposed portion.

Donn Centricitee Suspension System is an exposed 14 mm (9/16″) wide face grid. The narrower face fits reveal-edge panels, and square-edge panels up to 610 mm x 610 mm (24″ x 24″).

Donn Fineline Suspension System is an exposed 14 mm (9/16″) slotted grid. It features either a 6.4 mm (1/4″) or 3.2 mm (1/8″) slot in the center of the exposed face that adds an attractive feature. The face of this grid fits flush with the face of reveal-edge panels. Mitered intersections provide a clean, tailored appearance.

Donn DX Concealed Suspension System is designed for use with kerfed ceiling tile. In this application, the 24 mm (15/16″) grid surface is completely concealed by the tile.

Donn Meridian DXM. The aesthetics of more expensive bolt-slot grid with the function and utility of exposed grid.

These grid systems are available either fire-rated or non-rated, with the exception of Meridian, which is only non-rated. Fire-rated versions are made with a special fire expansion relief notch in each main tee to compensate for the significant expansion of the grid if exposed to the extreme temperatures of a fire. This expansion relief notch absorbs the expansion to keep the grid modules intact, thus preventing ceiling panels from falling out.

In addition to the five primary grid systems, CGC offers a range of special function products for controlled environment applications as follows:

Donn AX, a noncorrosive aluminum 24 mm (15/16″) exposed grid system, ideal for high-humidity environments or wet-cleaned areas.

Donn CE, a 38 mm (1-1/2″) exposed, pre-gasket, heavy duty grid system, designed for controlled environment rooms that require a clean, particulate-free, sealed ceiling system.

Donn ZXA/ZXLA, a 24 mm (15/16″) exposed, hot-dipped galvanized grid system with an aluminum cap, ideal for use in exterior and severe environments.

Donn DXSS, a 24 mm (15/16″) Type 316 stainless steel grid system, designed for industrial and other extreme environments.

installations

The following work documents an investigation into the use and implications of typical wall and ceiling assemblies. The process of working with these building materials to create full-scale installations became a means of generating commentary, speculation and further explorations.

Over several months, a series of installations emerged and disappeared in varying locations throughout the Architecture Building at Carleton University. Starting in the communal gathering space on the first floor, commonly called the pit, and moving vertically through the building, the location of the work charted a shift from constructing typical details to intervening on found conditions. The building itself acted as a unifying body that could contain the work and help to communicate the individual and yet related nature of each piece. A level of ambiguity surrounded the work in part fueled by uncertainty, from both the faculty and students, as to whether, or not, any given installation was permanent, or temporary, part of current renovations of the building, or an unsanctioned act of vandalism. The anonymity that this situation created also allowed the intention behind the work to remain open. While each installation had its own specific motivations and interests, the body of work was connected by its attempt to provoke an awareness of disregarded materials and conditions.

Aided by the relative ease of working with the materials in question, the process of creating installations was a reversal of a conventional architectural process of representing a project with drawings before building the design. Instead, the work started with constructing installations and proceeded with annotation and documentation of the work using drawings, photography and writing. This method of constructing and then interpreting installations, allowed a type of post rationalization that let subsequent readings of the work to become a tool for exploration and investigation.

Presented below are descriptions and images of ten installations that are organized into three sections based on their location within the Architecture Building and the methodology of the project. Each section starts with a

description of the common themes and interests of the installations before discussing each project individually. The Installations start with “Typical Assembly”, which deals with conventional materials and assemblies used in a typical way. This is followed by “Engagement with the Context” that contains site-specific interventions. Finally “Authoring a Finished Condition” discusses interventions done on the fifth floor of the Architecture Building.

Acoustical Ceiling Design & Application

9

typical assembly

The development of suspended ceiling systems in the early 1950s produced a shift in thinking about the function of a ceiling in construction. A ceiling simply had been regarded as a single-plane, fire-protective, finished element overhead. Suddenly, with the introduction of a suspension system, the ceiling also offered access to plumbing, electrical and mechanical components in overhead runs.

Today's suspended ceiling systems offer even more advantages for building construction, including a range of acoustical control options, fire protection, esthetic appearance, flexibility in lighting and HVAC delivery, budget control and optional use of overhead space.

Note that various organizations provide information and recommended standards or tolerances for installing ceiling suspension systems and acoustical panel and tile products. See pages 435 and 442 in the Appendix for information about standards and tolerances.

For instructions on the safe use of ceiling suspension systems and acoustical panel and tile products, see Chapter 13, Safety Considerations, Material Handling.

Fig. 24 Suspended Acoustical Ceiling Products

typical assembly

Constructing full-scale details and assemblies was a means of understanding the properties and implementation of common building materials. This began by learning the tools and methods used for working with steel studs, drywall, plaster and suspended acoustic ceiling systems. Implementing these techniques was an affirmation of the respective simplicity and difficulty of building and finishing these systems. While slapping together walls and hanging a ceiling are fundamentally simple tasks in principle, a level of craft is required to efficiently work with each system and material. After gaining a rudimentary understanding of how to construct typical details, the focus of the work became constructing installations that show the qualities of both the assemblies and the resulting space. The installations functioned as objects depicting common details and had little engagement with any specific context.

Open Corner | Fig. 25, 26

The freestanding installation presented an interior cavity wall and drop ceiling corner condition with the skeletal structure of the walls and the ceiling grid extending beyond the finished corner. The detail was constructed in the pit and stood as an isolated object against the backdrop of the buildings' brutalist interior. The deconstructed, didactic expression of the one-sided installation was similar to the typically smaller sized, sectional wall assembly details that are built at trade schools. The presence of the ceiling grid and the rhythm of the exposed steel studs added to a reading of the assemblies' usually concealed modularity and the industrially produced quality of the individual components. This modularity gave a modernist quality to the installation that was a fitting reminder of the history of cavity wall construction and its link to modernist ideology and the separation of skin, structure and services.

Fig. 25: [Background] Open Corner Installation, interior view
Fig. 26: [Foreground] Open Corner Installation, exterior view

Hotel entrance canopy, faced with SHEETROCK Brand Exterior Ceiling Board.

engagement with the context

aluminum nails. Treat fasteners and joints using a DURABOND or SHEETROCK Brand Setting-Type Joint Compound. If desired, panel joints may be concealed with batten strips or by installing panels with ends inserted into aluminum H-mouldings (by others). After joint compound has dried, apply one coat of oil-based primer-sealer and one coat exterior oil or latex paint or other balanced finishing system recommended by paint manufacturer to all exposed surfaces.

Gypsum Board Suspended Ceilings

Gypsum board applications for suspended ceilings provide excellent fire protection and appearance with exceptional economy. Applications include SHEETROCK Brand Gypsum Lay-In Panels in standard DONN suspension grid or surface mounted SHEETROCK Brand Gypsum Panels on CGC Drywall Suspension System.

Lay-In Panels SHEETROCK Brand Gypsum Lay-In Panels have a regular and FIRECODE C Core and square-cut edges. They are available in 610 x 610 mm (2′ x 2′) or 610 x 1220 mm (2′ x 4′) sizes and either natural paper facing or a laminated white vinyl facing with stipple pattern. Tiles may be installed in DONN Brand DX, DXL or DXLA suspension systems for most interior applications or ZXA, ZXLA or AX suspension systems for exterior applications or high humidity areas (see CGC ceilings catalogs for complete information).

Install tiles beginning at one corner of the room and work one row at a time. Tilt tiles up through opening and lower it to rest squarely on all four tees. Snap firmly in place. Where partial tiles are required, use a straight edge and cut face of tiles with utility knife, snap at score and cut through backing. Trim rough edges as necessary to fit.

Fig. 27

Surface Mounted Panels SHEETROCK Brand Gypsum Panels provide

engagement with the context

In the previous installation, the ability to see the work as an isolated object that can be deconstructed into components was important in drawing attention to the assemblies and materials used. This view of the materials helped to undermine how the typically continuous and seamless use of drywall and acoustic ceiling tiles creates a condition in which we only perceive the materials' surface. Despite this shift from surface to object, the materials and assemblies retained a level of neutrality that in part allows these materials to be pervasive and yet anonymous.

In the following installations partition walls and drop ceilings are utilized to alter existing spaces. This act not only changes the found condition, but also modifies the visibility and position of the materials being used. The materials' neutrality becomes subjugated by the position implicit in their use in a given installation. The Architecture Building's brutalist interiors, with exposed services and structure, provided a useful setting for this series of site-specific installations. The explicit concealment of the installations and the division of space, although still utilizing the materials and assemblies in a conventional way, became a provocative act that subverted the perceived neutrality of the materials.

Drywall Column | Fig. 28, 29, 30

Enclosing and covering structural elements with drywall is a common practice for both fire protection and aesthetics. The cylindrical concrete column in the pit of the Architecture Building is an imposing three-story structure that is the main feature of the space. The installation enclosed the bottom eight feet of the column in a three-sided drywall box. The back of the box was left open to allow a view into the oddly shaped cavity space that was created. A portion of a drop ceiling was hung over the drywall box intersecting the column. The partial ceiling projected out from one side of the column, visually truncating and interrupting its verticality. The incomplete nature of the ceiling and wall, only concealing parts of

the column from certain views, allowed the installation to undermine the weight and dominance of the column while also demonstrating how these assemblies are used to conceal structure.

Fig. 28: [Background] Drywall Column, cavity space around concrete column
Fig. 29: [Foreground] Drywall Column, view from above looking down

Fig. 30: Drywall Column, in construction

Drywall Window | Fig. 31, 32, 33

Following the concealment of the column in the pit, the covering of an interior window was used to continue this exploration of disguise using drywall. The window used for the installation is located in a small hallway outside of the Director's office and overlooks a classroom on the ground floor. From the window, a view of the entire classroom is possible. Using steel studs and drywall, a small wall was created to cover up the entire window. The flush white surface of the drywall gave no indication of what was hidden behind. In contrast to the hallway, the cavity, studs and backside of the drywall was put on display when seen from the classroom below. The window framed the cavity space, lending the wall a position of importance that was incongruous with the accidental and almost haphazard appearance of the covered window. The implicit subversives of covering up a window and denying a view, created a tension that could be leveraged to draw attention to the qualities of the assembly and installation. The relationship of surface and cavity are seen in the simultaneous concealment and display of the window and wall.

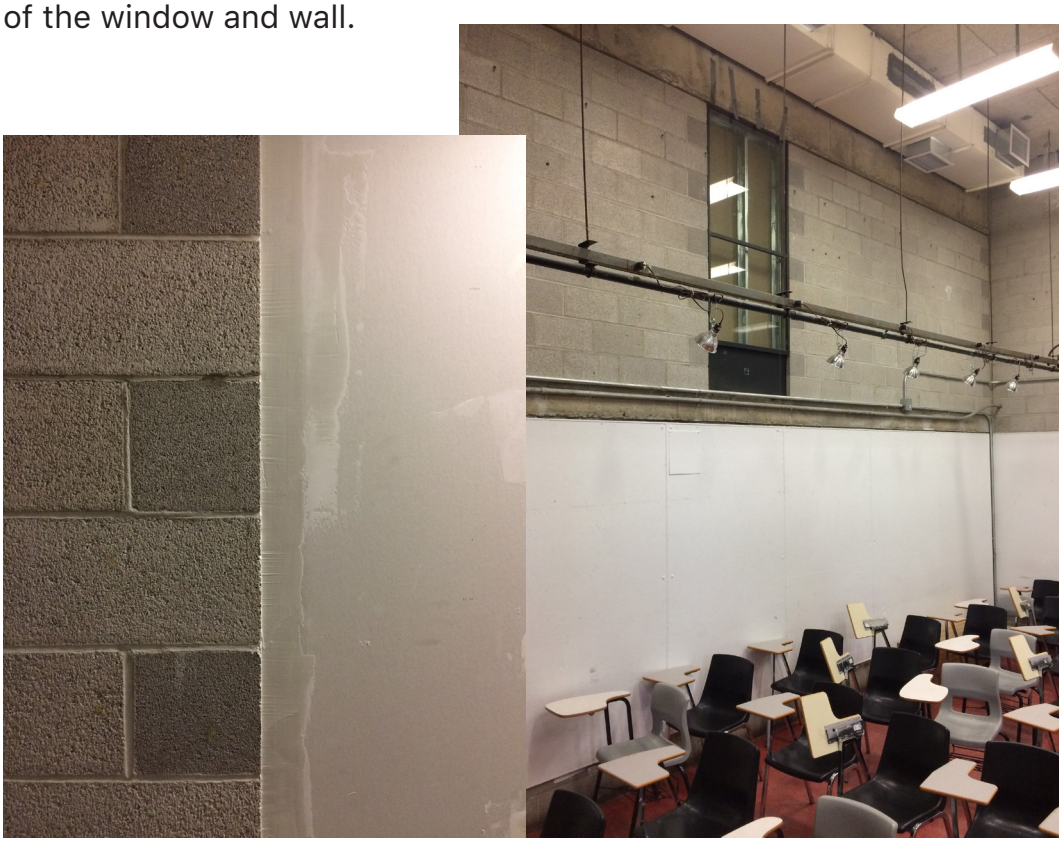


Fig. 31: [Left] Drywall Window Detail, view from mezzanine hallway
Fig. 32: [Right] Drywall Window, view from first floor classroom

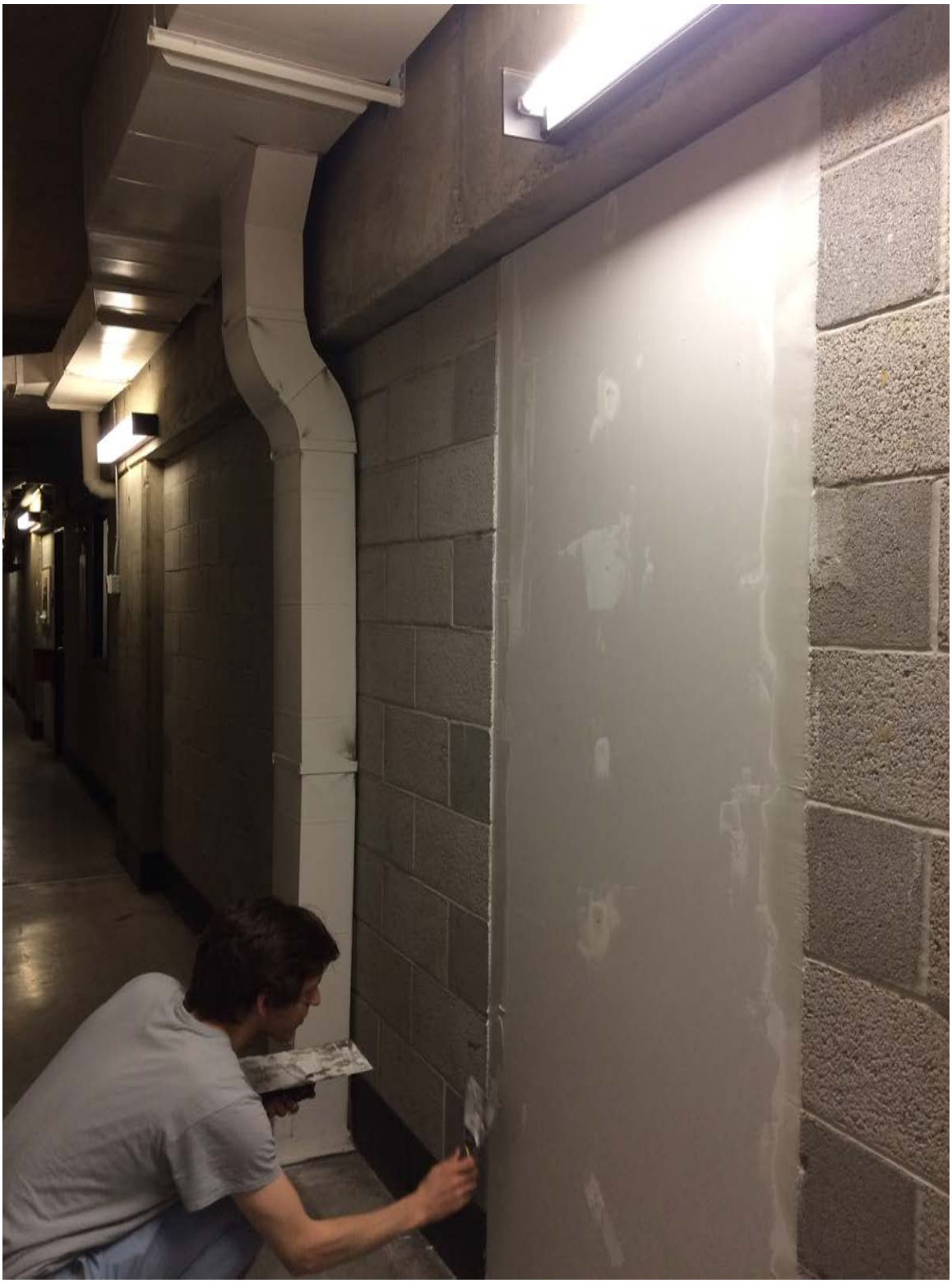


Fig. 33: Drywall Window, view from mezzanine hallway

Inverted Ceiling | Fig. 34, 35, 36

On the ground floor of the Architecture Building is a long three-story high atrium space called the “street”. Bridging this space is a mezzanine that provides access to the upper levels of the building. A drop ceiling was hung beside the mezzanine that divided a section of the street on the first floor from the space above. The ceiling extended out beyond the mezzanine’s railing and filled the area between a wall and a staircase. The individual ceiling tiles were installed upside down so that the unfinished backside of the tiles became the finished surface when viewed from the ground floor. In most applications, the thin layer of paint used to finish one side of the acoustic ceiling tiles is all that is perceived about its materiality. The ceiling tile is reduced to a surface of white perforated paint with no thickness, or memorable qualities. The unfinished side of the acoustic tile is typically a hidden surface, the dusty bottom of a cavity space, rarely seen, or imagined. The unfamiliar appearance of this surface is a reminder of a paradox in which ubiquitous materials remain foreign despite the widespread use. The other result of the installation was the separation of the ground floor from the two stories above. This use of the ceiling to divide space is not fundamentally different from the intended use of the assembly to separate sometimes-equally sized rooms from mechanical cavity spaces. Dividing such a large volume of open space in the street however, creates an exaggerated condition in which the ceiling’s function becomes peculiar, strange and unfamiliar. The absurdity of installing the ceiling in this context helps to make apparent the function of the ceiling by making it non functional.

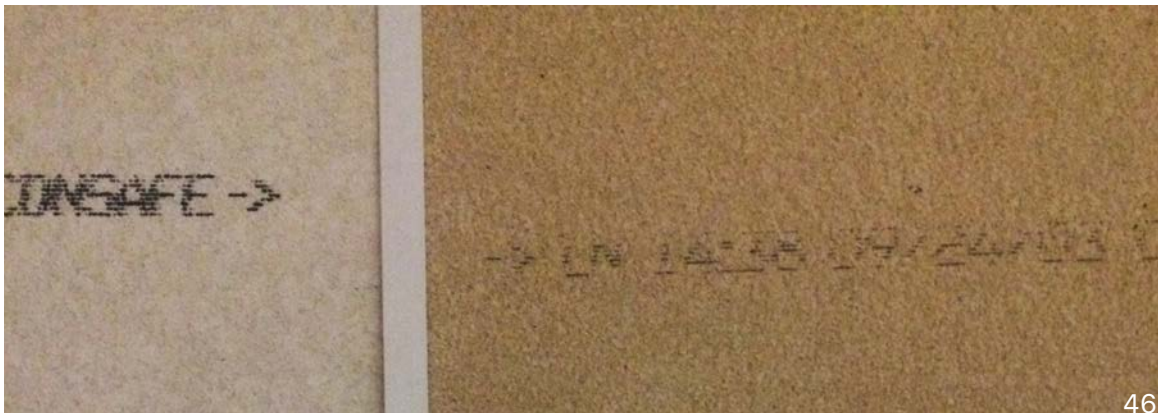
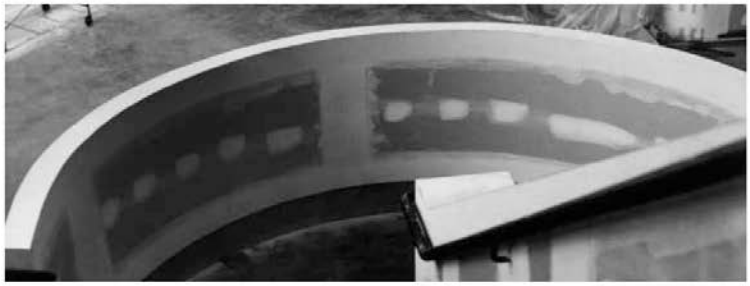


Fig. 34: [Background] Inverted Ceiling, view of underside seen from first floor
Fig. 35: [Foreground] Inverted Ceiling, view of ceiling in atrium space

Fig. 36: Inverted Celing, View from mezzanine level

Radius of curved gypsum board, joints treated, is shown in construction view (below).



After board has been applied to arch framing with nails or screws, apply tape reinforcement (CGC Brand Joint Tape for drywall panels or IMPERIAL Brand Type P or S for plaster base). Crease tape along center. Make scissor cut halfway across tape and 19 mm (3/4″) apart to make tape flexible. Apply uncut half to curved surface, and fold cut half of tape onto wall surface. Finish as appropriate for drywall or veneer plaster construction.

authoring a finished condition

Soffits

Gypsum board soffits provide a lightweight, fast and economical method of filling over cabinets or lockers and of housing overhead ducts, pipes or conduits. They are made with wood framing or with steel stud and runner supports, faced with screw-attached gypsum board. Braced soffits up to 600 mm (24″) deep are constructed without supplementary vertical studs. Select components for the soffit size desired from table following. Unbraced soffits without horizontal studs are suitable for soffits up to 600 x 600 mm (24″ x 24″). To retain fire protection, partitions and ceilings are finished with gypsum board before soffits are installed.

Installation

Braced Soffit Attach steel runners to ceiling and sidewall as illustrated on page 138, placing fasteners close to outside flange of runner. On stud walls, space fasteners to engage stud. Fasten vertical gypsum face board to web of face corner runner and flange of ceiling runner with TYPE S screws spaced 300 mm (12″) o.c. Place screws in face corner runner at least 25 mm (1″) from edge of board. Insert steel studs between face corner runner and sidewall runner and attach alternate studs to runners with screws. Attach bottom face board to studs and runners with TYPE S screws spaced 300 mm (12″) o.c. Attach corner bead and finish. Where sound control is important, attach RC-1 Resilient Channel to framing before attaching gypsum board.

Fig. 37

authoring a finished condition

The fifth floor of the Architecture Building was an addition to the roof of the original structure that significantly altered how the building was intended to be illuminated using daylight. The addition utilized existing fire stairs, which previously provided access to the roof, to connect the addition with the original building. Exiting the fire stairs onto the fifth floor marks a transition from the exposed materiality of the brutalist portion of the building into a generic space of drop ceilings and drywall. The interior corridors of the fifth floor provided a specifically unspecific space for the subsequent series of installations in the form of alterations. The un-specific nature of the hallways allowed the space to function as a type of generic space comprised of mass-produced componentized construction systems. Existing un-built, this type of generic space "exists" without being constructed, a hypothetical finished state in which the standardized manufacturer's details await implementation. Built examples of these spaces are infinitely variable and yet utterly indistinguishable from one another; reproducible spaces that exist with a complete indifference to any locality.

The act of intervening on the fifth floor was an inversion of the methods used when constructing installations within the original brutalist part of the Architecture Building. Altering this found condition became a means of authoring the space and materials by further undermining their anonymous quality.

Missing Tile | Fig. 38, 39, 40

The modular design of drop ceilings is not only key to the flexibility of the system, but also facilitates easy access to the cavity spaces that it conceals. As a result, voids often appear in ceilings as tiles are damaged, removed and never replaced. These voids in the ceiling break the continuity of the ceiling surface and the perception of a solid boundary. The first series of installations using drop ceilings was constructed using ceiling tiles taken from the fifth floor. The resulting voids in the ceiling exposed

sections of the building's mechanical and electrical guts. The voids framed views of the cavity space that heightened the desire and curiosity to see the space beyond the ceilings surface. One of the voids was subsequently photographed to document the space directly above the ceiling tile and a portion of this image was then printed directly onto the ceiling tile before it was placed back into its original location. The image made it appear as if a section of the tile had been cut out and removed. When seen from an angle, the image of the cavity space became distorted and the perspective of the image was no longer correct when viewing it from down the hallway. Despite the perspective of the image being partially flattened, some amount of the image's depth remained. This distorted view allowed the image to be read as both a surface and a void, simultaneously revealing the cavity space while also maintaining the surface of the ceiling. The effect of compressing the cavity space onto the surface of the tile was a way of undermining the tiles concealment of space and exploring the perception of the ceiling as surface. The depth of the cavity space is in effect reduced to the surface of the ceiling.

Fig. 38: Missing Tile, eye level view of installation in perspective

Fig. 39: [Background] Missing Tile, eye level view of installation in perspective
Fig. 40: [Foreground] Missing Tile, frontal view of installation from below

Drop Drop Ceiling | Fig. 41, 42, 43

When visiting buildings that were constructed before the use of modern drop ceilings it is not uncommon to find situations in which a new drop ceiling has been installed below an existing ceiling. This layering of ceilings, while not strictly a modern phenomenon, is an increasingly common result of the need for ever-larger mechanical spaces. On the fifth floor, a new section of drop ceiling was hung from the existing drop ceiling in the main hallway. The new ceiling lowered the height of the narrow hallway to the point that the cavity space began to rival the size of the space below. The ceiling tiles were removed from the original ceiling and used in the lower section of ceiling. The opening above the lower ceiling allowed a view down the length of the cavity space while underneath the lower ceiling the appearance of the ceiling remained the same. Unlike the limited view created when removing individual ceiling tiles, this opening in the ceiling revealed the spatial qualities of the concealed world above. In the process of revealing a space that it is designed to enclose, the new ceiling became a provocation about the encroachment of cavity spaces. Compressing and lowering the ceiling height of the existing space acted as a way of making the existing condition visible.

Fig. 41: Drop Drop Ceiling

Fig. 42: [Background] Drop Drop Ceiling
Fig. 43: [Foreground] Drop Drop Ceiling, view of installation from below looking up

Dummy Vent | Fig. 44, 45

The nondescript appearance of most ceiling tiles is indicative of how suspended ceiling systems are designed to recede into the periphery of our perception. The perforated matte finish of the tiles renders the ceiling as a featureless surface that is best described by its color and not by its material properties. Apart from the recessed cavities of light fixtures that are missing their translucent covers, ventilation registers are one of the few interruptions commonly found in the flat surface of drop ceilings. In this sparse context, vent registers and other functional objects start to define the ceilings aesthetic expression. Using a computer numerically controlled (CNC) milling machine, a ceiling tile from the fifth floor was cut into the shape of a ventilation register. The "dummy vent" mimicked the geometry of its metal counterpart but appeared as if it had been carved, or pressed, out of a solid material. The milling process exposed the oatmeal colored mineral fiber that is hidden beneath the finish of the tile, completely altering its perceived materiality. When installed in the fifth floor, the milled tile appeared to be made of a completely different material from the rest of the ceiling. Beyond its novel materiality, the dummy vent also resulted in a rereading of the existing vents in the ceiling. Creating a non-functional vent aestheticizing the vents' functional counterparts and painting them as a type of unintentional motif. Referencing the functional objects of the ceiling as a somewhat facetious aesthetic proposition addressed the condition in which mundane and practical objects take on an unintentionally inflated aesthetic significance.

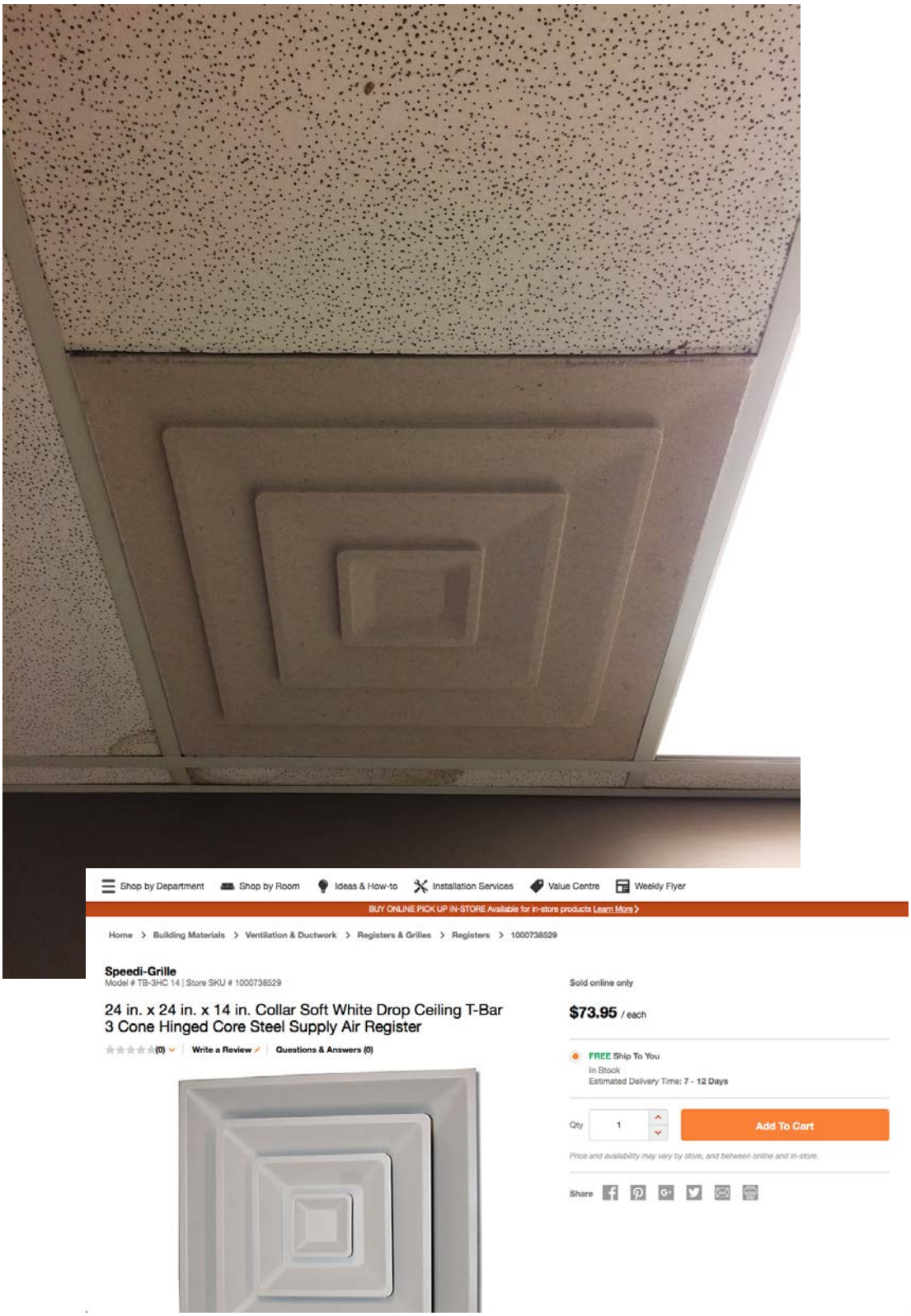


Fig. 44: [Background] Dummy Vent
Fig. 45: [Foreground] Screenshot of Homedepot website showing vent register

Self-referential Drawing | Fig. 46, 47, 48

Throughout the process of creating most of the previous installations, photography was the primary method of documenting and presenting the work. While photography did allow some level of re-interpretation of the projects, it remained mainly a tool for recording installations that were often temporary and changed over time. After photographing the Drop Drop Ceiling installation, drawing was used as a way to elaborate on the intention of the work. The resulting drawing used images taken inside the cavity space to create an imagined sectional perspective view of the ceiling and installation. The drawing focused on a depiction of the cavity space above the ceiling and the complexity of its mechanical equipment. The sectional perspective allowed the drawing to show a combination of didactic information about the material assemblies and the spatial qualities of the cavity space. The line drawing was subsequently divided into four sections and milled into ceiling tiles using a CNC router. The result was a light beige image that appeared to be etched into the mineral fiber of the ceiling tiles. The perspective of the image created a rudimentary sense of depth that altered the perception of the planar surface of the ceiling tiles. When the tiles were installed in the ceiling on the fifth floor, the drawings' perspective became distorted in a way that was similar to previous installations using images printed on ceiling tiles. While the skewed angle of viewing distorted the image, the depth of the image remained present. When viewed from multiple sides, the perspective and depth of the image remained visible while the content of the drawing became abstracted and hard to read.
The drawing produced the odd impression that space existed within the surface of the ceiling tile. The self-referential subject matter of the drawing ultimately became of secondary importance when compared to the effect created from the images' perspective. However, the images' depiction of the spatial qualities of a cavity space was fitting to create depth in the surface of the ceiling.

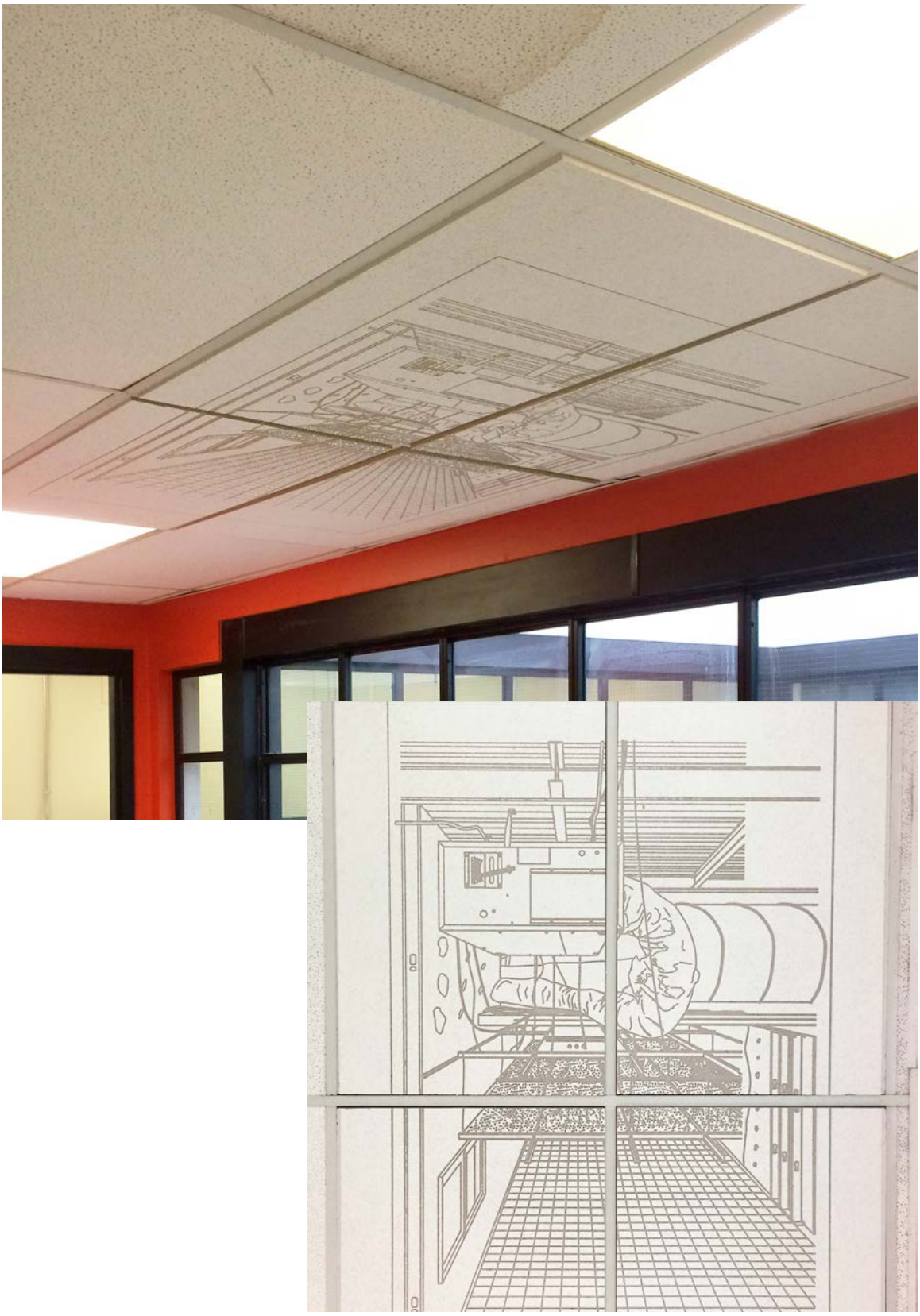
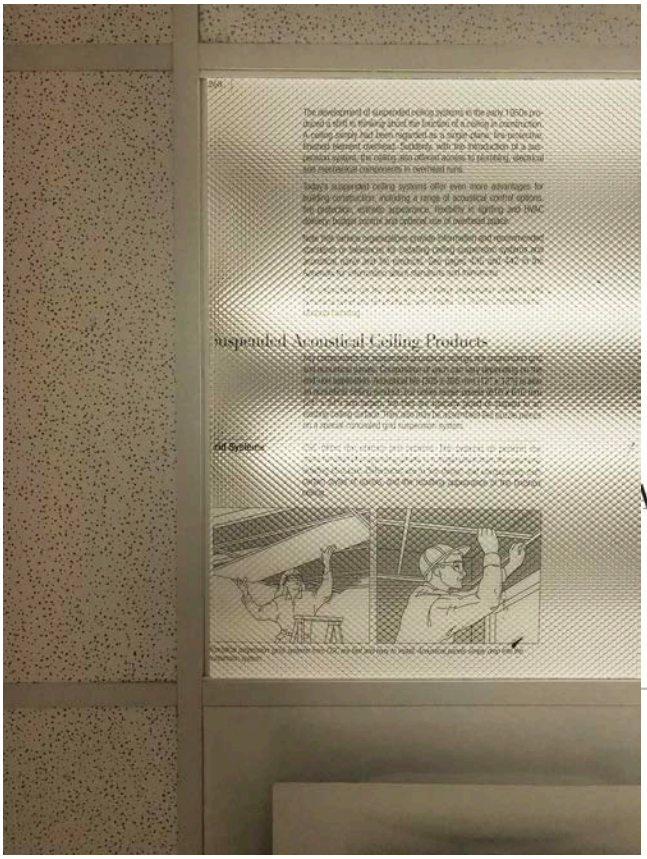


Fig. 46: [Background] Self-referential Drawing
Fig. 47: [Foreground] Self-referential Drawing, view of installation from below looking up

Fig. 48: Self-referential Drawing

Product Literature | Fig. 49, 50

Fluorescent lighting is a ubiquitous part of most drop ceiling systems. The lighting fixtures are typically covered in translucent plastic screens that periodically interrupt the uniform materiality of the ceiling. The textured plastic panels have a surface that is as neutral as the lighting that the fixtures produce. Having previously explored printing images on drywall and ceiling tiles the plastic lighting screens provided a completely different material and element of the ceiling to work with. A page from the Canadian Gypsum Company (CGC) Construction Handbook, discussing the history and benefits of suspended acoustic ceiling products, was printed onto the light screen. The backlit image had the appearance of a sign, or advertisement that was promoting the ceiling it was installed on. Product literature and promotional material from various CGC and United States Gypsum (USG) manuals became a recurring element of subsequent drawings and presentations.



The development of suspended ceiling systems in the early 1950s produced a shift in thinking about the function of a ceiling in construction. A ceiling simply had been regarded as a single-plane, fire-protective, finished element overhead. Suddenly, with the introduction of a suspension system, the ceiling also offered access to plumbing, electrical and mechanical components in overhead runs.

Today's suspended ceiling systems offer even more advantages for building construction, including a range of acoustical control options, fire protection, esthetic appearance, flexibility in lighting and HVAC delivery, budget control and optional use of overhead space.

Note that various organizations provide information and recommended standards or tolerances for installing ceiling suspension systems and acoustical panel and tile products. See pages 435 and 442 in the Appendix for information about standards and tolerances.

For instructions on the safe use of ceiling suspension systems and acoustical panel and tile products, see Chapter 13, Safety Considerations, Material Handling.

Acoustical Ceiling Products

Key components for suspended acoustical ceilings are suspension grid and acoustical panels. Composition of each can vary depending on the end-use application. Acoustical tile (305 x 305 mm (12″ x 12″)) is also an acoustical ceiling product, but unlike larger panels (610 x 610 mm (24″ x 24″) and larger), the tiles are typically glued or stapled to an existing ceiling surface. They also may be assembled like puzzle pieces on a special concealed grid suspension system.

CGC offers five primary grid systems. The systems all perform the same function of suspending panels in a single plane from the overhead building structure. Differences are in the design and compatibility with certain styles of panels, and the resulting appearance of the finished ceiling.

Fig. 49: [Left] Product Literature
Fig. 50: [Right] Product Literature Source material, USG Handbook

Drawing the Surface | Fig. 51, 52, 53

Running parallel to the full-scale installations and investigations of materials was the development of a method of drawing and collage. The drawings used a combination of manufacturer's details, promotional material, hand and digital drawings and images to create collages on the materials and assemblies being referenced. Using found materials as the basis for the drawings mirrored the approach taken with regard to intervening on existing conditions and spaces. Unlike the full-scale installations and alterations of space, this representational method of working aimed to encode the surface of the materials with a layered narrative that depicts information about the materials and their spatial qualities. The collaged drawings and images were printed, sometimes in a series of layers, directly onto the materials like manufacturer's labels. The printing process often required cutting out small pieces of large sheets of drywall, or ceiling tiles to allow the material to fit inside the printer. The drawings were printed on the backside of the materials and installed back into the original section of drywall, or ceiling tile. Flipping the drawings modified both sides of the material and allowed the drawings to interact with both sides of some of the installation. The resulting drawings acted as a palimpsest of information that commented on and exposed the qualities of the drawings' own substrate.

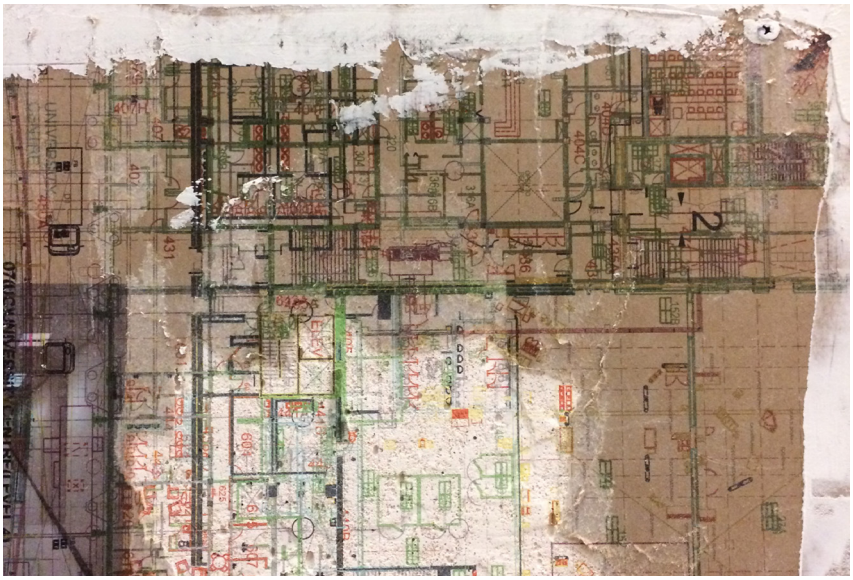


Fig. 51: Drawing printed on drywall

Fig. 52: Backside of drywall drawing installed in stud wall

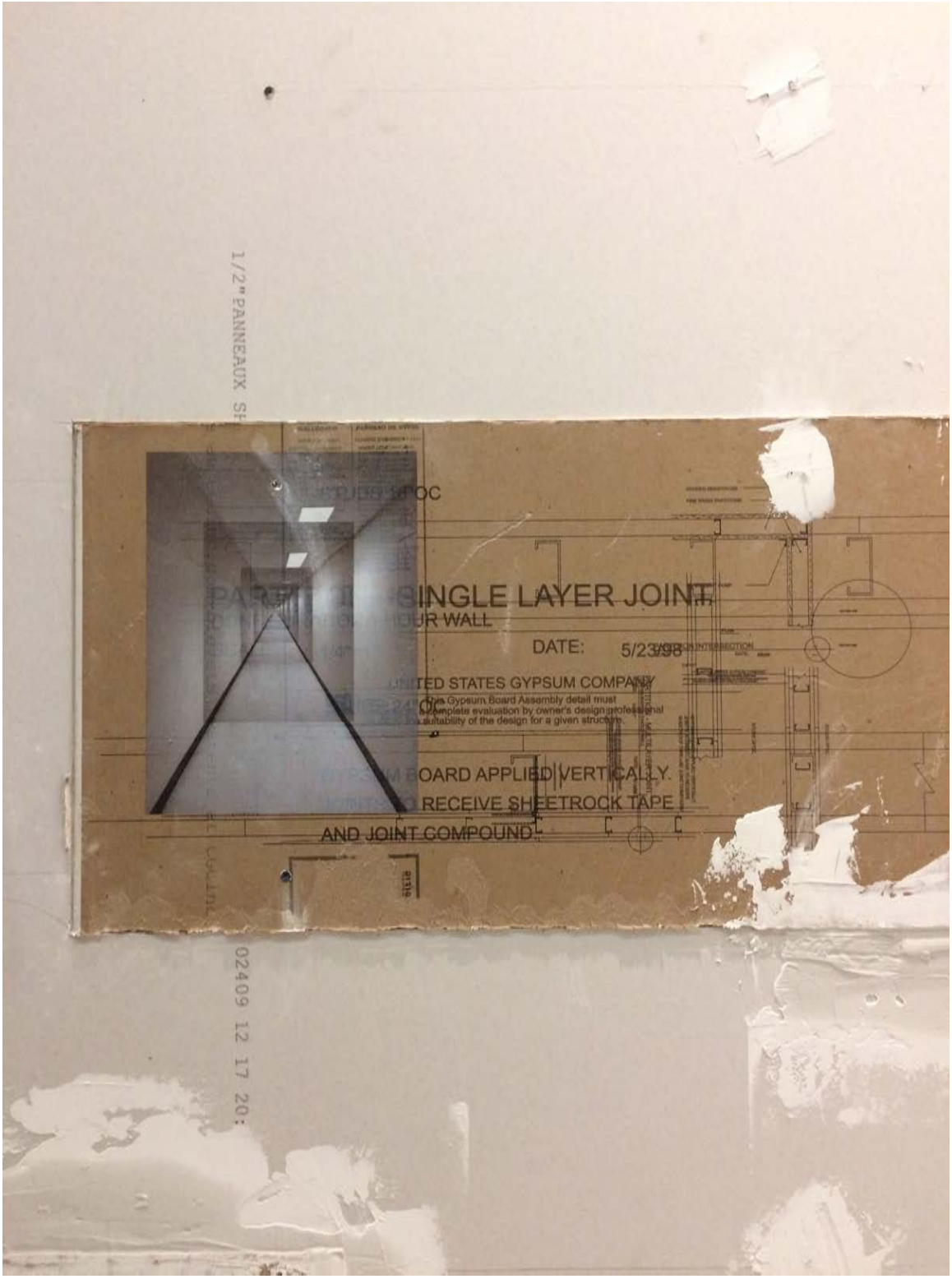


Fig. 53: Frontside of drawing printed on drywall


sources
ME TO
tape with an adjustable edge guide and a tip that accepts the utility knife blade. With this tape the edge guide is set for the desired width and placed
tool or drywall router is available. Keyhole saws and similar cutting tools can be used for any type of cutout. After cutting hole, remove any loose face paper at cut. Refer to Chapter 14, Tools and Equipment, for examples of appropriate tools.
Application
Screws are applied with a positive-clutch electric power tool, commonly called an electric screwgun, equipped with adjustable screw-depth control head and a Phillips bit. The use of screws provides a positive mechanical attachment of gypsum board to either wood or steel framing.
Adjust Screwgun Set adjustment for proper screw depth. For gypsum panels (drywall), screwhead must be driven slightly below face of panel.

Fig. 54

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