‘a new trend in store design’: unbuilt modern retail interiors in postwar usa

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abstract

In 1945 Pittsburgh Plate Glass Company released a portfolio of speculative designs for store fronts and retail interiors featuring glass. Titled *There is a New Trend in Store Design*, it was directed at designers and architects, and, through them, potential customers for their range of products. Pittsburgh Plate Glass Company was just one among many building material manufacturers competing for market share in the United States of America following World War II. This essay demonstrates how a set of unbuilt retail designs that were never intended to be constructed can illuminate prevailing trends of design and the socio-political, economic, and cultural contexts that informed their production. By examining drawings of unbuilt interiors, this essay establishes the types of contextual information that can be gleaned through an interpretive exploration of such works, including economic and social conditions, architectural and retail design trends, typical drawing modes and techniques, developments in building materials and practices, and approaches to advertising.

Through an analysis of the historical circumstances that underpinned the portfolio’s production, it is established that unbuilt design drawings contain clues that foreshadow built designs to come, and by exploring these design ideas alongside the designers’ statements, a richer understanding of the subject of the designs, in this case, post-war retail premises, may be uncovered. This essay explores not only the use made of unbuilt interiors as marketing material but also the role of the glass and interior in the expression of Modernist ideas. Specifically, it reveals the importance of glass in the Modern retail interior, as it developed from being viewed solely as an enclosed internal space into becoming a critical part of the store’s ‘open front’, reconceptualising the façade condition of architecture in the commercial context of urban retail spaces in post-war North America and marking this period as a turning point in design history.

keywords

Modernism; history; retail; glass; marketing

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the unbuilt drawing as a contextual record

In February 1945, a time when most commercial building had been curtailed by World War II, the Pittsburgh Plate Glass Company (PPG) released a portfolio booklet of forty-one retail designs titled *There is a New Trend in Store Design*, ostensibly to stimulate building activity and encourage use of its products [Fig. 01].[1] This was a time when marketing and publicity materials were burgeoning, with trade literature aimed at the designer or builder, supplemented by a further range of catalogues targeting the client. In *There is a New Trend in Store Design*, twenty-two 'outstanding American Architects' and designers presented speculative propositions for post-war store designs. The use types ranged from drug stores and restaurants to furniture stores and automobile sales rooms. Each page layout included a plan, exterior, and/or interior perspectives, details, a statement on PPG products specified, and the designer's portrait photograph and signature. Among those represented were Walter Gropius (1883–1969), Eliel (1873–1950) and Eero Saarinen (1910–1961), J. Robert F. Swanson (1900–1981), Victor Gruen (1903–1980) and Elsie Krummeck (1913–1999), Louis Kahn (1901–1974), and Skidmore Owings and Merrill, being Louis Skidmore (1897–1962), Nathaniel Owings (1903–1984), and John Merrill (1896–1975).

PPG's portfolio stands out not only for its size and physical format as a forty-four-page black and white bound portfolio booklet measuring 510 mm x 385 mm, but also for its content. Available by mail order coupon, the portfolio was promoted in the design press, with a number of featured designs published both as advertising and as editorialised content in architectural journals including the influential *Pencil Points* (1944) and *Architectural Forum* (1945–46). Indeed, *Pencil Points* devoted a special issue to retail architecture with Victor Gruen and Elsie Krummeck's 'Conception of a Haberdashery Store' [Fig. 02] and William Lescaze's 'Conception of a Theatre' [Fig. 03] from the soon to be released portfolio appearing on its cover in August 1944.[2] Designs would also appear in overseas journals, including the Australian *Decoration and Glass* (1948–49).[3] Moreover, PPG republished selected designs from *There is a New Trend in Store Design* alongside built examples in its 1945 booklet, *How Eye-Appeal Inside and Out Increases Retail Sales,* aimed at retailers, property owners, and realtors.[4] The reach of these designs shows how through media communications unbuilt designs had a role in spreading future-looking design ideas and product information beyond their built counterparts, particularly during the time following the Great Depression into the post-war period.

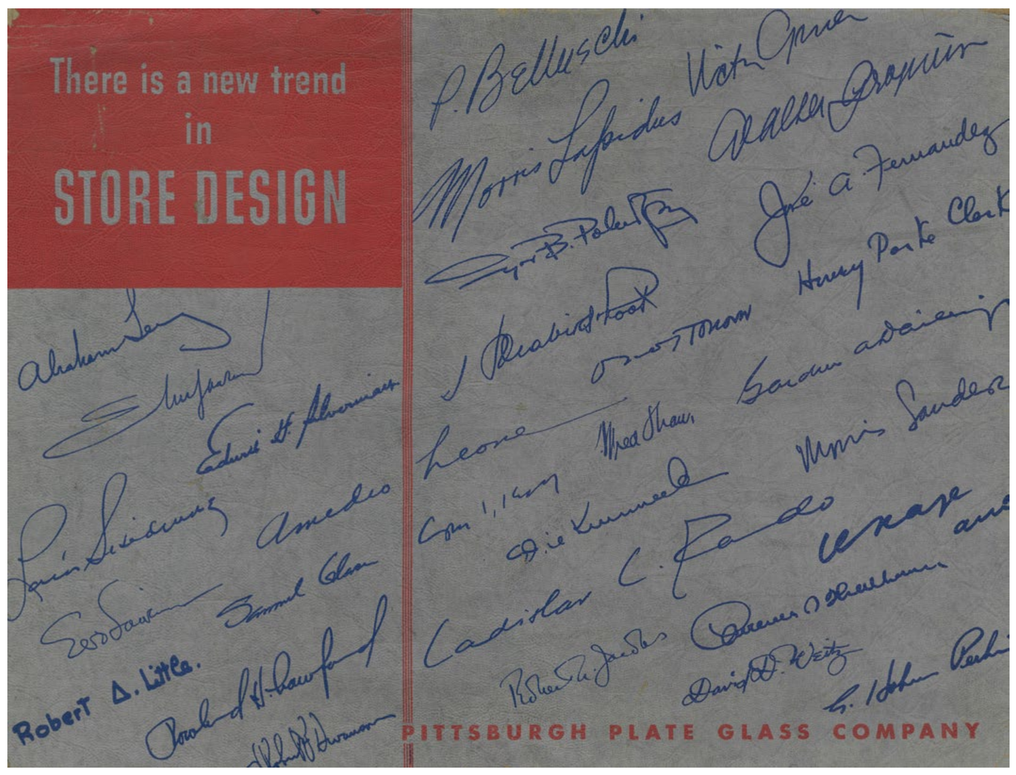

Figure 01.
Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945) cover, Architecture Museum, University of South Australia.

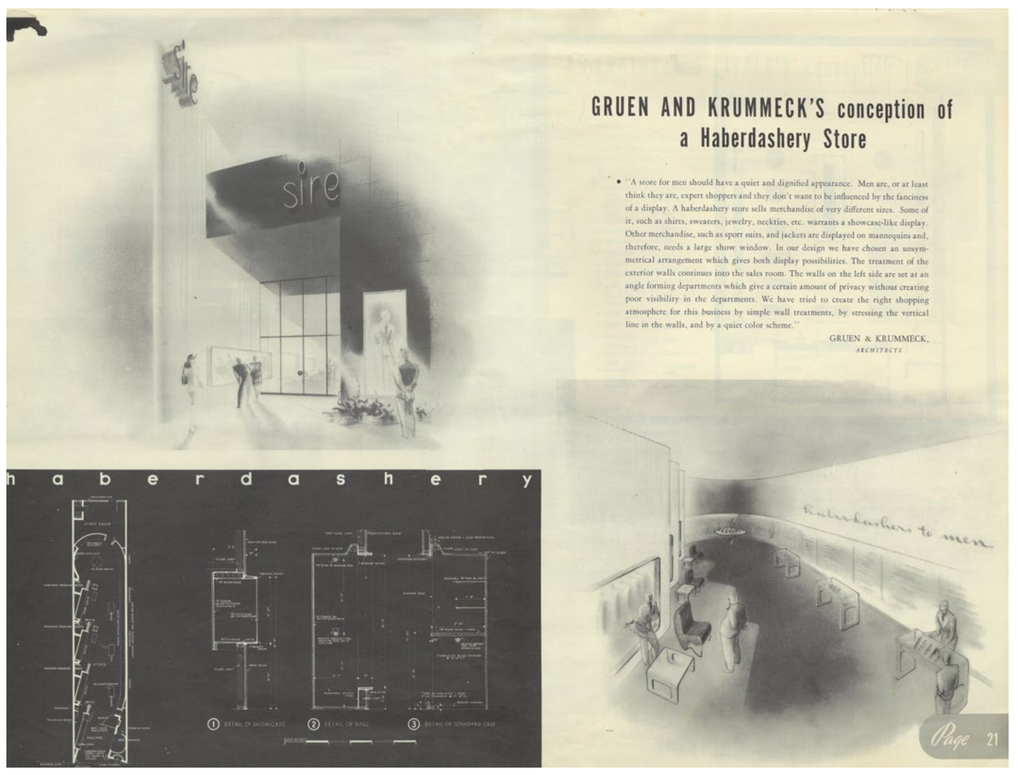

Figure 02.
'Gruen and Krummeck's Conception of a Haberdashery Store' (menswear), Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 21, Architecture Museum, University of South Australia.

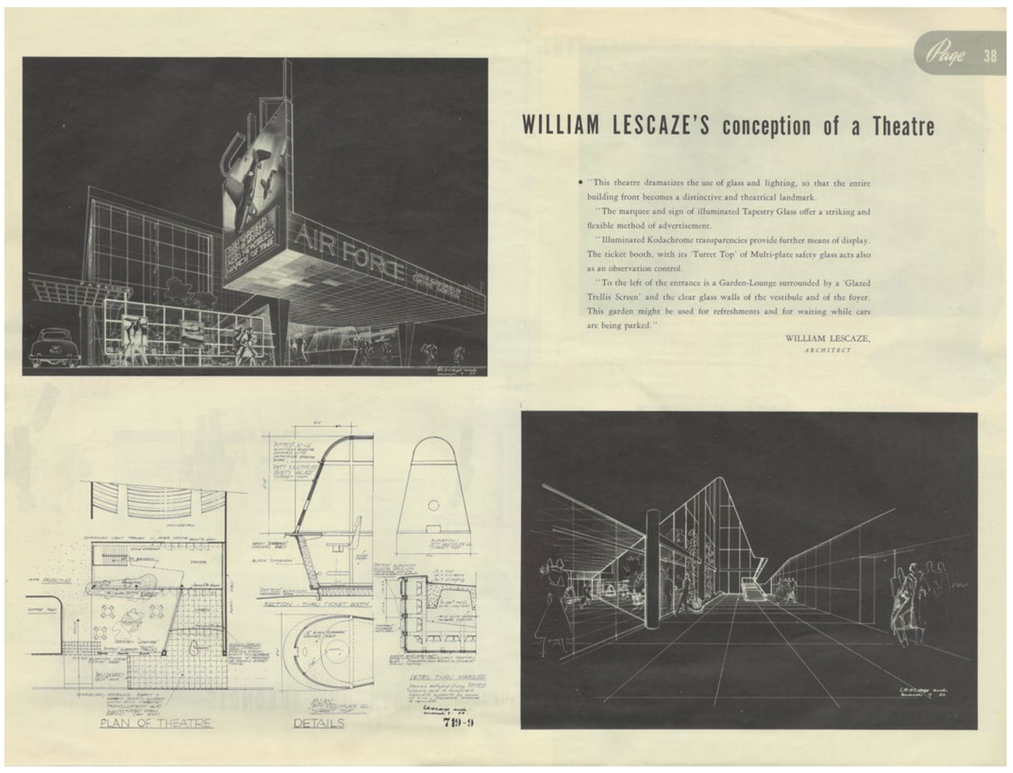

Figure 03.
'William Lescaze's Conception of a Theatre', Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 38, Architecture Museum, University of South Australia.

What is striking about this portfolio of unbuilt retail designs is its emphasis on interiors, with all but three of the schemes including interior perspectives. Of those that didn't (an automobile service station, beauty parlour, and florist) the use of fully glazed store fronts allowed for perspectival views into the building from outside to illustrate interior layouts, fixtures, and furnishings. In part the emphasis on the interior was a response to the trend towards the 'open front', where the street front elevation of a store was designed to be floor-to-ceiling glass. It was also a response to the rise of the enclosed and air-conditioned suburban shopping mall where individual store façades could disappear completely with the interior displays becoming the face of the store. As 'open' glass storefronts proliferated along main streets, it can be argued that their role, and that of the modern interiors on show, were significant in the introduction of Modernism to the public. Yet, to date, Modern store fronts and retail interiors have been an under-researched and under-represented area in architectural and design histories. Indeed, preservation architect Mike Jackson has noted the 'rapid acceptance of modern architecture in the commercial sector, particularly in storefronts' is a part of architectural history that remains relatively unrecognised.[5]

This essay demonstrates how a set of unbuilt designs for store fronts and interiors never intended to be constructed can be used as a prompt to uncover the circumstances that lay behind their production, as well as to illustrate prevailing tendencies in design. It argues that the drawings contained in *There is a New Trend in Store Design* can be interpreted as evidence that designs—and by extension, built forms, when, and if, realised—are not only the result of the designers' creative practice, but also a product of economic, technological, social, or aesthetic conditions and contexts. In the writing of design history, too often the 'architect as hero' approach has limited the exploration of what designs can tell us about wider historical themes. Mark Gelernter has noted that this approach has supported the idea that the designer's 'creative imagination' alone drives the design, something this essay aims to counter.[6] By looking at the way in which unbuilt designs were presented to an audience of fellow designers as well as potential clients, this essay also reveals how architects and designers worked with building material manufacturers and the media to create images of Modernism and the Modern designer, in order to promote and market building products and services. Additionally, it looks at the unbuilt drawings as evidence of the designers' intentions, noting that these were also influenced by the client, in this case, Pittsburgh Plate Glass Company, who commissioned the designs with the intent that they be used in marketing their products.

Employing an interpretive-historical method, this essay explores the phenomenon of unbuilt design drawings through a case study situated in a particular time and place. The selection of a group of designs rather than a single image as the subject of this essay is in part a response to the principle advanced by architectural historian James O'Gorman, who noted that 'many individual architectural drawings have artistic value, but only a series of drawings has architectural value', emphasising the point that drawings can be considered for more than their artistic or aesthetic

values.[7] Throughout the essay the role of the unbuilt drawing in writing architectural and design history is explored, situating the portfolio of store designs within its historical context. Utilising a framework developed by Collins, Collins, and Garnaut exploring the significance of design records as contextual documents, an outline of the types of information that can be garnered from the unbuilt drawings was established.[8] The following sections of the essay will explore these thematic categories: economic and social conditions, architectural ideas and style, building materials' development, retail design, advertising of materials, and the promotion of architects' and designers' work.

setting the scene

Pittsburgh Plate Glass's *There is a New Trend in Store Design* portfolio booklet was released on the cusp of the post-World War II rebuilding era, yet it was undoubtedly influenced by the straitened economic conditions that had carried over from the Great Depression of 1929–1939. Commercial building activity had been hard hit by the severe economic downturn beginning in 1929, and by 1934 it was estimated that around 80 per cent of building industry workers were unemployed, with architects and designers also finding themselves out of work.[9] The subsequent reduced demand for building products and materials led to further unemployment as manufacturers laid off workers.

With an aim of alleviating the effects of the Depression, the United States Government under President Franklin D. Roosevelt increased Federal oversight and control through the New Deal Plan introduced following his election in 1932. The New Deal included banking reform and programmes for work relief, social security, and agriculture.[10] Directly relevant to the recovery of the building industry was the New Deal's *Modernize Main Street* programme introduced in 1934.[11] Its aim was the renovation or, as it was termed at the time, the nationwide 'modernisation' of retail precincts and commercial strips of cities and towns. Facilitated by the Modernization Credit Plan operated by the Federal Housing Administration under the National Housing Act of 1934, the government insured low-interest loans of up to $50,000 from private lenders made available for building renovations.[12]

Retail merchants and property owners were urged to modernise their stores to encourage consumer-led retail trade and give a boost to the construction industry. This encouragement came in many forms, with the New Deal 'thriv[ing] on public relations techniques'.[13] The Federal Housing Administration promoted its programme nationally, seeking and obtaining the cooperation of industry, with the slogan *Modernize Main Street* continuing to have resonance into the post-war era despite the programme's effective end in 1943.[14] Architectural historian Gabrielle Esperdy has noted that modernisation in this period referred to 'exterior and interior alterations, both stylistic and spatial, as well as to mechanical and equipment improvements, modernization implied notions of progress, optimism, and a deliberate embrace of modernity in character and appearance, in form and material'.[15]

It is important to note here that modernisation is not the same as Modernism, and although modernisation may have incorporated aspects of Modernism, its focus was on the improvement and upgrading of the store, which during the 1930s was more likely to have been referencing the Art Deco style. Esperdy has recognised that modernisation, which had been regarded in the 1920s as 'the odd-job alleyway of building', was 'repositioned as a crucial building industry activity, one that would produce jobs, increase demand for materials, and generate economic revival'.[16] This emphasis on renovation, of interiors as well as exteriors, placed a focus on the work of the emerging specialists in interior design, elevating their work both in the eyes of the public as well as the established architectural profession.

While the recovery of the building industry post-Depression benefitted from the New Deal

programmes, the outbreak of World War II again put a dampener on commercial activity with resources directed to defence-related works and supply. Architects were again impacted, and, according to architectural historian Andrew Shanken, 'in 1942, the Committee on Architectural Service warned: "The impact of war on building has made our profession a major casualty".[17] This continued to be the case through the war years as PPG indicated in the foreword to its portfolio of store designs in 1945.

> For several years, there has been almost no store construction or remodelling work done. Necessary building limitations of the war period have prevented it. And as a consequence, store design has not been a subject of active, current importance to architects or retail merchants for a considerable period.[18]

The war brought about advances in technology and materials that held the potential to be harnessed in service of the Modernist movement with its principles of form following function, rational use of structure, and truth in materials. Yet, government-imposed restrictions on labour, as well as materials including metal frames, plate glass, and electrical fittings, created a hiatus in their introduction for commercial uses.[19] In a 1942 article on wartime shopping facilities *Architectural Record* noted that these restrictions meant 'that imagination must be substituted for metal. It is surprising what can be done with glass, gypsum board, paint and wall paper. In terms of construction a restyling can be a minor job; in terms of results it can be a major transformation.'[20]

Architect Morris Lapidus (1902–2001) was a vocal advocate for the modernisation of stores during the war. Lapidus recommended that store interiors be replanned and redecorated for efficiency and increased selling space, believing that modernisation of the interior of the store could be 'carried out [...] without interfering with the war effort' by using 'non-critical material and limiting the structural work entailed'.[21] Lapidus believed 'the interior is the mechanism for selling', as illustrated in his 'conception of a Men's Apparel Shop' in the PPG *There is a New Trend in Store Design* portfolio [Fig. 04].[22] In his design, Lapidus utilises functional planning to organise the interior, which, like most of the designs in the portfolio, is situated in a ground floor tenancy in a main street setting with two solid side walls, rear service access, and store front featuring glass—specifically PPG products.

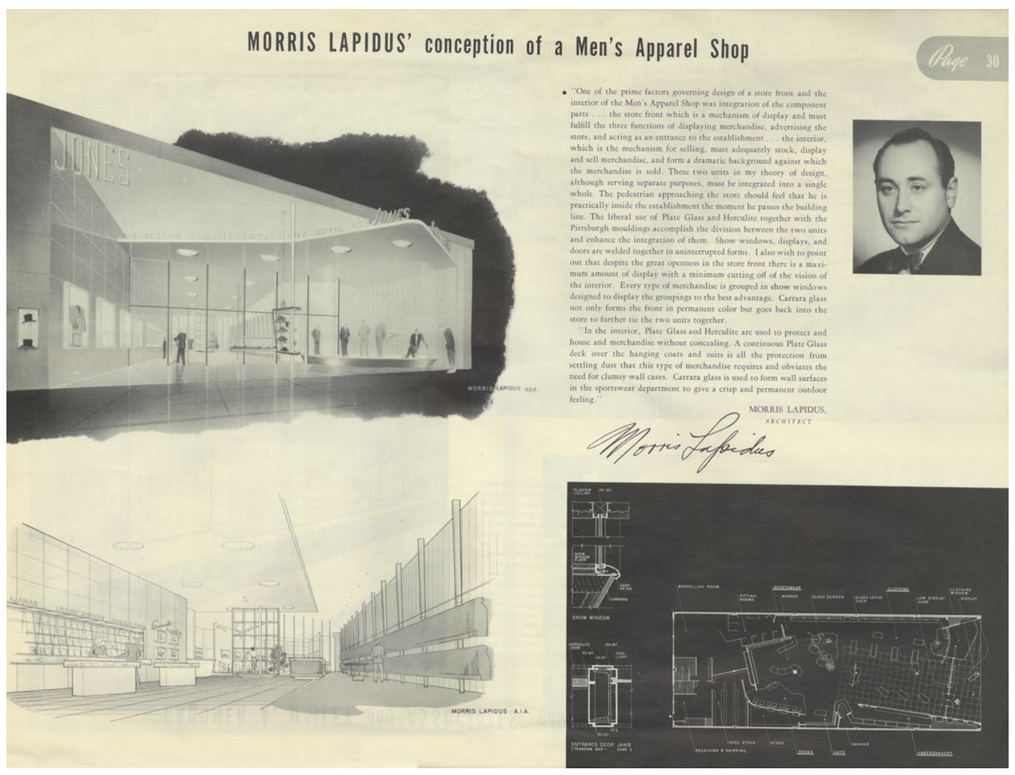

Figure 04.
'Morris Lapidus' Conception of a Men's Apparel Store' in Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 19, Architecture Museum, University of South Australia.

modernisation and modernism

Since the late nineteenth century, storefronts and retail interiors had been regularly renovated to reflect the latest style trends, new materials and technologies, and retail marketing ideas. As early as 1929, architectural periodicals were featuring contemporary European examples of retail architecture, with magazines such as *Architectural Forum* including photographs of Modern stores in an article devoted to the topic by commercial architect Jacques Ely Kahn (1884–1972).[23] *Architectural Forum's* 'Shop and Store Number' of June 1929, points to the trend in its editorial remarks:

> in mercantile, commercial and semi-public architecture, such as clubs and restaurants, the modern expression in architectural design and interior decoration is consistent,

appropriate and inspiring. [...] This new or contemporary style is undergoing a rapid and constantly changing development. As to what form of expression it will show five years from now, it is interesting to speculate.[24]

The stalling of building activity during the 1930s' economic crisis had a significant impact on architects' and designers' thinking, which architectural historian Elizabeth Smith recognised, stating, 'when practice wanes, theory flourishes.'[25] This was a period when European Modernism was gaining attention in the United States of America. In 1932 the Museum of Modern Art in New York had exhibited the work of European Modernists alongside a selection of home-grown proponents in the exhibition curated by Philip Johnson (1906–2005) and Henry Russell Hitchcock (1903–1987) titled *Modern Architecture*, which later toured the country.[26] The expression of the contemporary style, however, was not always pure and Hitchcock would later critique the 'Drugstore modern' style that had proliferated on Main Street, critical of what he saw as the commercial appropriation of only superficial features of what he and Johnson had termed the International Style.[27]

During the 1930s modernised designs of retail storefronts using glazing and enamelled sheet metal transformed earlier façades composed of elaborate metal frames set within walls of stone or brick. Shop interiors, windows, entrances, and displays were modernised while the upper storeys were often left untouched.[28] This increased from the mid-1930s, when, as Richard Mattson points out, 'store front designs in business districts of small cities and towns across America have changed with regularity, responding essentially to [...] commercial competition, new building technology and materials, changing architectural tastes and the automobile.'[29]

However, the architectural profession was reluctant to embrace this category of work, seeing it as beneath their lofty ideals.[30] Store modernisation was generally small in scale and did not carry the prestige of public, civic, or large commercial works. Modernisation, as remodelling rather than building from the foundations up, led to such works being seen as minor architecture by architects.[31] This state of affairs was noted by architect Joseph Weiss, who wrote in *New Pencil Points* in 1943, 'Considering the fact that today almost every store is designed by someone, it is surprising what a small part of this work goes to architects', noting that, 'most store work goes to shop equipment companies and [industrial] "designers".'[32]

While the architectural profession was guilty of not taking advantage of retail design opportunities, magazines such as *Interiors* were aimed squarely at those who were involved, listing its intended readership as 'interior designers, architects, industrial designers, the interior decorating departments of retail stores, and for all concerned with the production of interiors.'[33] This was also the audience PPG hoped to influence. Building on the Federal Housing Authority's work during the *Modernize Main Street* programme in which retail design along main street was seen as having the potential for aiding 'the general beautification of the city', the task at hand for building material manufacturers in this arena was to encourage architects' involvement in retail design, in particular, specifying their products.[34]

marketing glass

The group of store designs featured in the PPG portfolio had as much to do with the promotion of developments in building materials and practices as it had to do with the emergence of new design sensibilities. The historical background to these developments is telling, with PPG just one company among many building material manufacturers that had set about capitalising on the opportunities brought about by the 1930s *Modernize Main Street* programme. During that period, PPG's structural glass, marketed under the name of *Carrara* and available in a range of opaque colours, was promoted as a decorative surface for the lining of

walls. Such structural glass, also known as vitreous marble, is a coloured glass with high compressive strength, and a polished and reflective surface. Earlier in the century its use had been principally as a more affordable substitute for marble in situations that required functional, easy-to-clean hygienic surfaces such as in hospitals, toilets, bathrooms, and cafeterias.[35] With the emergence of Art Deco style in the 1920s came the expansion of coloured structural glass into decorative applications as it became a desired surface for interior settings, from cocktail bars to offices.[36] In the 1930s, during the *Modernize Main Street* programme, PPG began to market its *Carrara* coloured structural glass as an exterior facing material as well, especially applicable for shops, expanding its palette of colours to cater for this use.[37] Glass was seen by many designers as the epitome of contemporary design; as historian Sara Jane Elk noted, structural glass 'held beauty as a machine-made building product, [...] It also conformed to a variety of shapes and illumination, held as symbols of technological achievement. Structural glass with properties of imperviousness and practicality, [...] represent[ed] a new age.'[38]

Yet, PPG was not the only glass manufacturer vying for the attention of designers and storeowners. Competitor, glass manufacturer Libbey-Owens-Ford (LOF) also recognised the commercial opportunities brought about by the desire to modernise storefronts. LOF held the recognisable brand *Vitrolite* for its structural glass products and, in a clever marketing move, sponsored an architectural design competition earlier in 1935 also called *Modernize Main Street* conducted by *Architectural Record* magazine. With prize money totalling $11,000, the brief called for designs for the modernisation of the interior and exterior in four retail categories of food stores, drug stores, apparel shops, and automotive sales and service stations.[39] The competition attracted over three thousand entrants, something Esperdy recognises as 'an indication of either the profession's dire straits or its new commercial interests.'[40]

Following the announcement of the winners in each category, winning designs and honourable mentions were published in the pages of *Architectural Record* and the competition entries were also used in advertising for Libbey-Owens-Ford products.[41] First-prize winning architects received $1000 each with the food store category won by G. Foster Harrell Jr, the drug store category by M. Righton Swicewood, the automobile sales and service station category by Alfred Clauss, and the apparel shop category by Suren Pilafian and Maurice Lubin. All the winning and mentioned designs were published in a colour booklet titled *52 Designs to Modernize Main Street with Glass* for distribution to architects and designers, merchants, and building owners. The jury hoped the competition would raise the standards of store design not only through communicating with other designers but also by 'providing merchants and dealers with a guide as to what an intelligent public taste will demand.'[42]

Competition between PPG and LOF increased during the late 1930s. PPG utilised the retail profit angle in its marketing campaign, and, as Mattson has noted, it wasn't alone, as many 'manufacturers promoted renovations as shrewd business sense.'[43] As a demonstration of this, in 1935 PPG released a mail-order booklet titled *How Modern Store Fronts Work Profit Magic* and launched the Pittsburgh Time Payment Plan in order to make store modernisation easier for store owners.[44] PPG advertised itself as a 'one stop shop' for store front fabrication, with its *Pittco Store Front* including not only the glass products but also metal fixings and paint.[45] It offered architects a range of information material to aid in their specification of these, including sets of detail drawings available by mail order from the Pittsburgh Glass Data Service.[46] Following the release of PPG's Pittco Store Front promotion, LOF introduced its *Complete Storefront* in late 1937 as a rival product.[47] It also released a book titled *I Want the Smartest Store on the Street* (1937) with colour renderings of shopfronts and colour charts.[48]

Glass manufacturers utilised an opportunity to promote their products to the general public at the 1939 World's Fair in New York. With the fair's theme of the 'Land of Tomorrow', the Glass Incorporated Pavilion designed by Shreve, Lamb & Harmon architects with interior exhibits by Skidmore Owings & Merrill, was shared by Pittsburgh Plate Glass Company, Owens-Illinois Glass Company, and Corning Glass Works. PPG also took its campaign on the road between 1940 and 1951, with a Store Modernization Caravan, which displayed scale models of Pittco's 'Open Vision' store fronts and interiors visiting Chambers of Commerce, banks, and architects.[49] An earlier PPG Store Front Caravan had toured the US in 1936–1937 and included scale models of store fronts designed by PPG's in-house architect Walter Dorwin Teague (1883–1960). New technologies allowed for the expanding range of products to be developed.[50] By 1945 the range of PPG products promoted as suitable for store fronts and retail interiors included polished plate glass, structural glass, glass blocks, mirrors, glass doors, and store front metal.[51]

Pittsburgh Plate Glass employed architects on staff in its art department for many years. One of these architects was E. A. Lundberg, who produced a series of speculative store front designs called 'Design of the Month', which ran from 1944 to 1956 with designs mailed out to subscribers for compilation into a large-format portfolio.[52] PPG paid architects for their speculative designs as referenced in *Pencil Points*, which noted that PPG's 'desire for well-designed subjects to use in promoting their store front materials led them to employ the best architectural talent they could discover.'[53] These designs were the basis for *There is a New Trend in Store Design*, which was notable for the range of architects and designers represented in its pages, including a number who had emigrated to the United States of America from Europe in the twentieth century. Architects such as Walter Gropius, William Lescaze, Victor Gruen, Eero Saarinen, and Oscar Stonorov (1905–1970) aided the transmission of Modernism to their new home. Similarities in designs across the PPG portfolio can be understood as indications of the acceptance the Modern or International style had gained in the United States of America during this period and will be further elucidated below.

the interior as store front

In the August 1944 issue of *Pencil Points* in which many of the unbuilt designs featured in the PPG portfolio were also published, it was stated that 'By now it has become almost axiomatic that the entire store front – often the whole building façade – is treated as a display element.'[54] The movement away from coloured opaque structural glass, such as PPG's *Carrara* or LOF's *Vitrolite*, as a façade treatment synonymous with the Art Deco or Moderne, and towards transparent plate glass marked the PPG portfolio designs as significantly different from the LOF *Modernize Main Street* competition entries of a decade earlier. Continuity between street and the interior was a key design move in the unbuilt designs featured in the PPG portfolio. The 'open front', where the display window was transformed into an all-glass store front, effectively gave the entire store interior a new role as replacement for the formerly solid and opaque building façade, thus elevating the interior in importance. The refocusing of architecture on volume rather than mass, as promoted by Hitchcock and Johnson in *Modern Architecture*, can also be seen as giving the interior this new prominence.[55]

With the open front the most significant change to store design in this period, its implications for the arrangement of the interior were demonstrated in the PPG portfolio. These included comprehensive planning, flexibility of layout for changing display fittings and fixtures, the use of colour from a psychological perspective, lighting both natural daylight and for night time, integrated and often concealed artificial lighting, the use of different levels, and awareness of circulation within the interior with angled walls and curves utilised to direct customers' movement in many schemes. Such an approach is manifest in 'Conception of a Jewelry

Shop' by Walter Gropius, in which he recesses the front plate glass wall back from the footpath while giving the side wall a plate glass mirror with the result that the store front effectively disappears [Fig. 05]. The setback additionally allows potential customers to effectively enter the premises before they pass through the transparent glass doors to the interior proper. This stepped alignment of floor surfaces and wall treatments explores the nature of the inside/outside boundary.

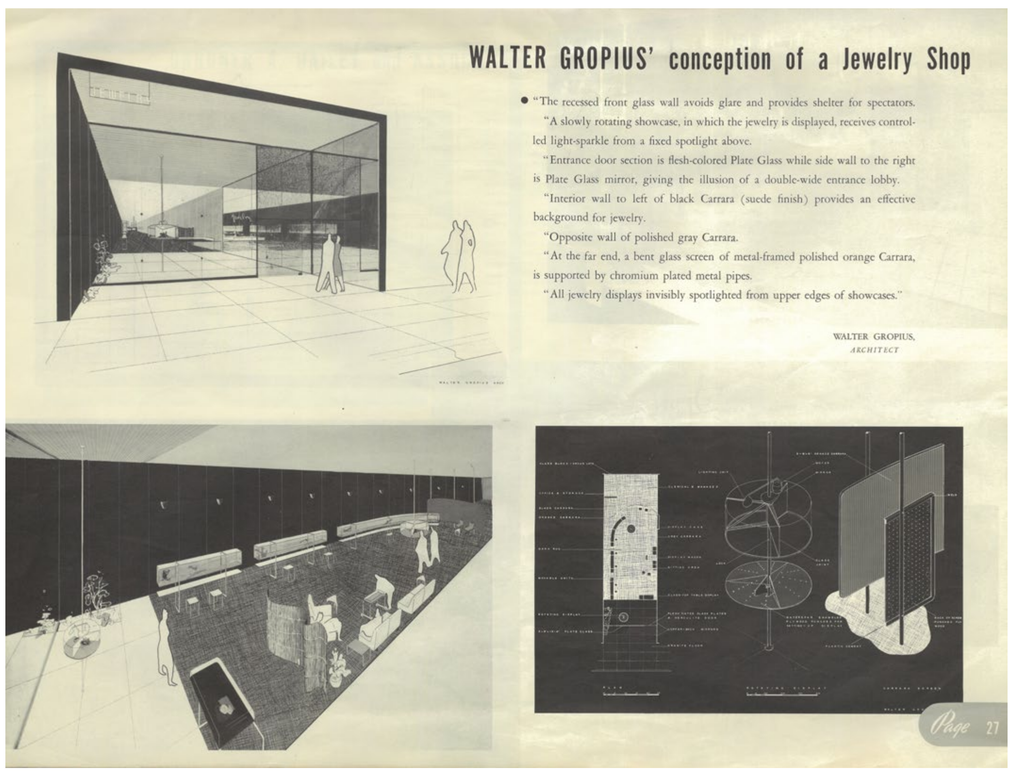

Figure 05.
'Walter Gropius' Conception of a Jewelry Store', Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 27, Architecture Museum, University of South Australia.

Richard Mattson has called the open front 'the most enduring and influential trend in store front design in the late 1940s.'[56] The 'open front' for retail stores had been championed earlier in the *Store Fronts of Tomorrow* competition of 1942 sponsored by Kawneer, a metal store fronts manufacturer, and facilitated by *Pencil Points* magazine.[57] Here, the display window was transformed into an all-glass store front, effectively giving the entire interior a new role and status on the street front. Across the competition entries, illustrations were used in an explanatory fashion to introduce the concept of the open front to readers, with the judges' noting,

> Fundamentally, there are today just two ways of designing store fronts. Either they are closed billboards or open-faced interiors protected by a glass entrance wall. [...] The open-faced type is far more than a store front. By permitting the entire interior to act as a display interior, it opens up new and sometimes dangerous opportunities for the storekeeper. [...] Only by thinking in three dimensions can the designer create a truly successful store.[58]

The open front' was promoted by PPG as a way to 'make the interior an important and valuable display element that extends an invitation to the passer-by.'[59] Competing glass manufacturers composed their own proprietary slogans championing the open front, and 'during the 1940s, Libbey-Owens-Ford frequently advertised its own "Visual Front" designs in the trade journal *Chain Store Age*.'[60] It wasn't only glass that enabled such openness on main street. Extruded lightweight aluminium frames replaced the copper and brass of earlier times, and fluorescent lighting provided a way of extending the hours the interior was on show, with neon signs attracting the passer-by.

The open front also offered a further opportunity with the introduction of regional and local shopping centres and malls, which would grow in popularity following the war. Wartime architectural periodicals had looked forward to the building of shopping centres for post-war housing developments as an opportunity for architects to elevate retail design to a new level and a new scale.[61] Victor Gruen and Larry Smith saw shopping centres as offering a new 'Town Square' where people could gather for community activities as well as shopping.[62] This appealed to architects and planners whose post-war interest in community rebuilding found expression in these centres.[63]

However, there were precursors to the shopping centres from the century before. Philosopher and cultural critic Walter Benjamin's (1892–1940) unfinished *Arcades* project saw the Parisian retail arcade as part of the 'prehistory of modernity', recognising the retail arcades of Paris as 'the most

important architectural form of the nineteenth century', for, among other reasons, their function as forerunners to the department store, and their use of iron, which he termed an 'artificial building material.'[64] The nascent consumerism Benjamin explored in *Arcades* can also be seen to have emerged by the latter half of the twentieth century and is especially evident in the design of the shopping malls and centres of the 1950s onwards, which would eventually threaten the primacy of main street. Shopping centres as locations for proposed retail stores were indicated in several of the PPG designs, including a gift shop and a restaurant design by Saarinen and Swanson Architects. The setting for these conceptual designs was a shopping centre with parking for both cars and helicopters on the roof. Drawn in a cartoon-like manner, the 'Conception of a Restaurant' even featured a mobile 'Serving Suzy' roving the restaurant, 'a small, noiseless, electric-powered jeep' from which the chef would serve the meals of patrons [Fig. 06].[65] The restaurant was integrated into the mall all the more by its use of a plate glass store front.

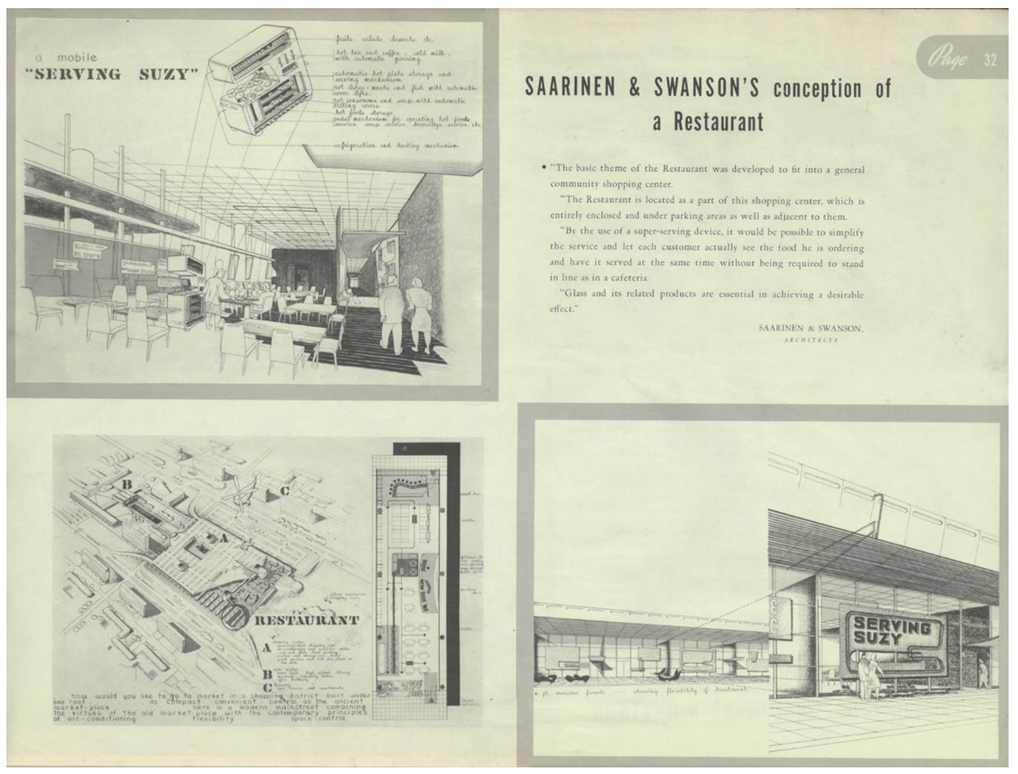

Figure 06.
'Saarinen and Swanson's Conception of a Restaurant' in Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 32, Architecture Museum, University of South Australia.

In the PPG portfolio, Architect José A. Fernandez stated he was 'a firm believer in the principle of the "open faced" store front, and [...] designed this jewelry store with a maximum of glass, in order to reveal the interior to the passerby and prospective customer in a dramatic fashion.'[66] Fernandez was an established retail specialist known for his design for Rebajes' jewellery store built on Fifth Avenue, New York.[67] Fernandez contributed another design to the portfolio, 'Conception of a Women's Apparel Shop', which set back the plate glass that divided inside from outside and was sheltered by a canopy to provide an undercover area for window shoppers [Fig. 07]. Fernandez used elements from his Rebajes design, with the cowhide stools notable among furnishings. The interior as store front can be seen illustrated in Fernadez's exterior perspective taken from eye level and set against a black background. The mannequins in the curved glass window draw the eye, with smaller items in show cases, three under the roof overhang to attract shoppers, while a fourth is situated inside just past the glazed

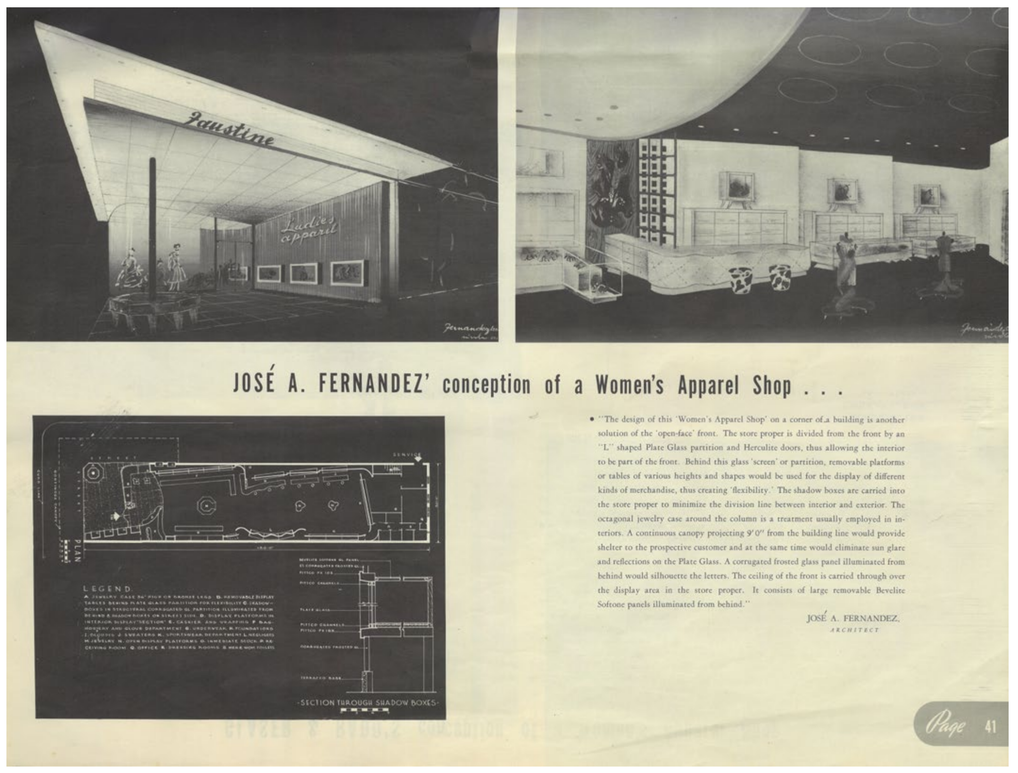

Figure 07.
'José A. Fernandez' Conception of a Women's Apparel Shop' in Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 41, Architecture Museum, University of South Australia.

doors to encourage the customer to continue the browsing experience inside. The use of screens and fittings to direct the movements of the customers are used not only in this design, but also in many throughout the portfolio.

Common across designs in the PPG portfolio were those that emphasised the continuity between outside and inside with forms and materials penetrating openings or repeating on both sides of the glazing appearing as continuous ceiling and

wall planes. As would be expected, glass was the key featured material, often in multiple forms in each design, including glazed ceilings. Architect Morris Lapidus, whose designs for a women's apparel shop appeared in the PPG portfolio, wrote in a statement on his design that 'not only the storefront but the entire interior has been conceived as one large display unit.'[68] While in his 'Conception of a Men's Apparel Shop' [Fig. 04] Lapidus noted it would be the efficiency of space in service of selling that would convince the store owner client of the value of design, something he emphasised:

> The store front is developed as a mechanism to accomplish three separate related functions: display, store advertising, and customer entrance. The interior, considered as a mechanism for selling, has adequate stock space and specially designed display units, organized against a dramatic background. Liberal use of plate glass accomplishes both the division between the exterior and interior and their integration.[69]

Green planting, which linked inside and outside, was another element that appeared in several designs. Notable for the use of plantings in his design was Pietro Belluschi (1899–1994) whose 'Conception of a Beauty Parlor' with its garden forecourt covered in vines led to an interior incorporating planter boxes set inside the full height glazed front wall [Fig. 08].[70] Belluschi was critical of ill-conceived open fronts:

> In my opinion, this idea in many cases has fallen short of success because the attention of the onlooker was divided and confused between an interior which was not designed to be seen from the sidewalk, and an exterior that hated to lose its traditional identity.[71]

His beauty parlour differed from the other retail spaces in that it was selling a service rather than products, with the remainder of the interior beyond the reception area disposed of as private cubicles for treatments.

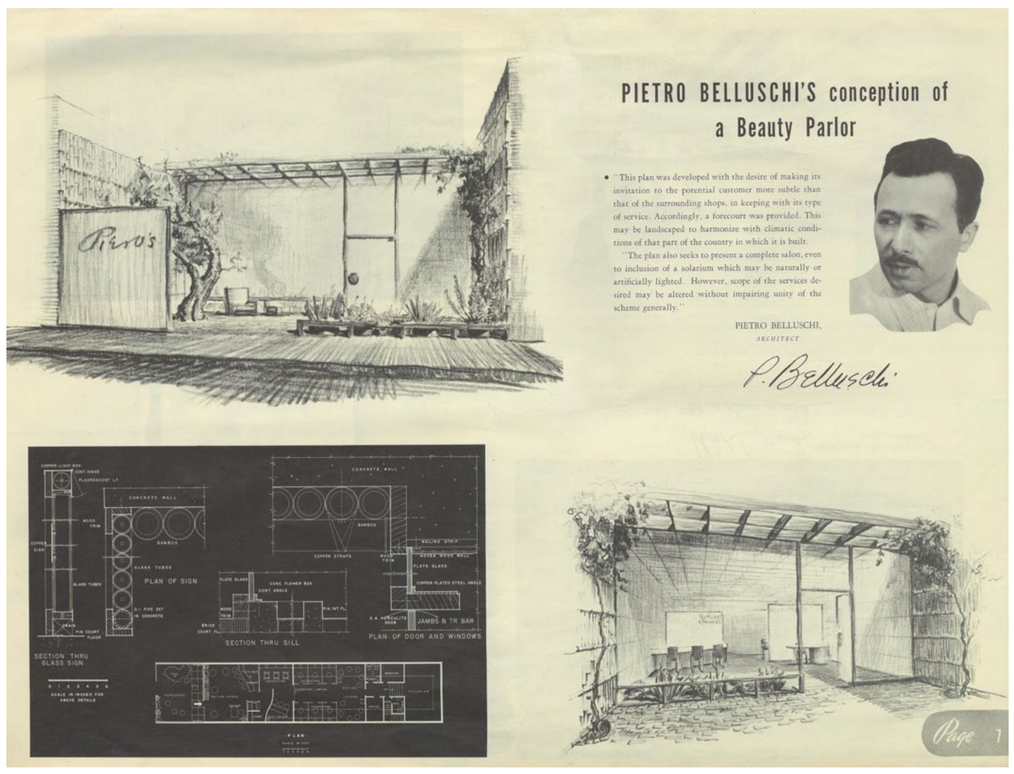

Figure 08.
'Pietro Belluschi's Conception of a Beauty Parlor' in Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p.7, Architecture Museum, University of South Australia.

Architect Victor Gruen, who would become famous for his work in marketing, in 1947 proclaimed:

> Stores lead a double life. They are factories with machinery behind the scenes; machinery which must be well-oiled, invisible and inaudible. To the outside they present the gayer side of the double-life – they are show places and exhibits with that air of arousing interest in the displayed merchandise.[72]

Thus, the open front presented a challenge as well as an opportunity, with the functions of stock storage, deliveries, and preparation needing to be housed behind the scenes. By 1952 it was being recognised by architect Caleb Hornbostel (1905–1991) that,

> The open front has raised a host of design problems which did not exist before, namely, reflection, sun glare and sun control, new methods of window display, artificial lighting both day and night, a general reorganization of merchandise within the completely exposed store, together with a new approach to the design of display fixtures and casework in general.[73]

The increased visibility of interiors would also place them centre stage in architectural renderings. No longer was the exterior elevation or perspective presenting an opaque façade; the interior effectively became part of the streetscape. The open fronted store created a need for designers to communicate a new concept through the drawing. The challenge was how to express the near invisibility of plate glass store fronts in presentation drawings, both looking from the outside in, but also the reverse view, taken from the inside out.

drawing modes and techniques

The drawing modes and techniques used to communicate architectural and interior design ideas were in constant flux during the mid-twentieth century. Turning away from the Beaux Arts towards Bauhaus ideals, Walter Gropius' approach was influential in the United States through his role at Harvard University and is evident in his unbuilt designs in the PPG portfolio. The graphic style favoured by progressive architects and designers of this period was 'thin black lines of even weight, flat projections, flying planes without real bulk, the absence of indication of materials, and stark black-and-white coloration'.[74] Indeed, Gropius' own contributions to the PPG portfolio demonstrate his attitude to drawing as well as design. In his 'Conception of a Drug Store', which included a soda fountain, the external perspective taken at eye level is drawn as a collision of planes, emphasising the horizontal black *Carrara* glass ceiling while minimising the angled store front by utilising clear frameless plate glass [Fig. 09]. The focus on the volume of the shop interior is emphasised in the interior perspective taken from ceiling level giving a clear view of the layout, which is explicated further by the floor plan on the page. Details of the fittings shown in axonometric projection complete the page layout. Figures are shown in outline, while texture is reserved for the furnishings, screens, and floor surfaces. As with most of the PPG portfolio designs, colours and materials are specified through the text with a palette of black and orange *Carrara* glass with chrome.

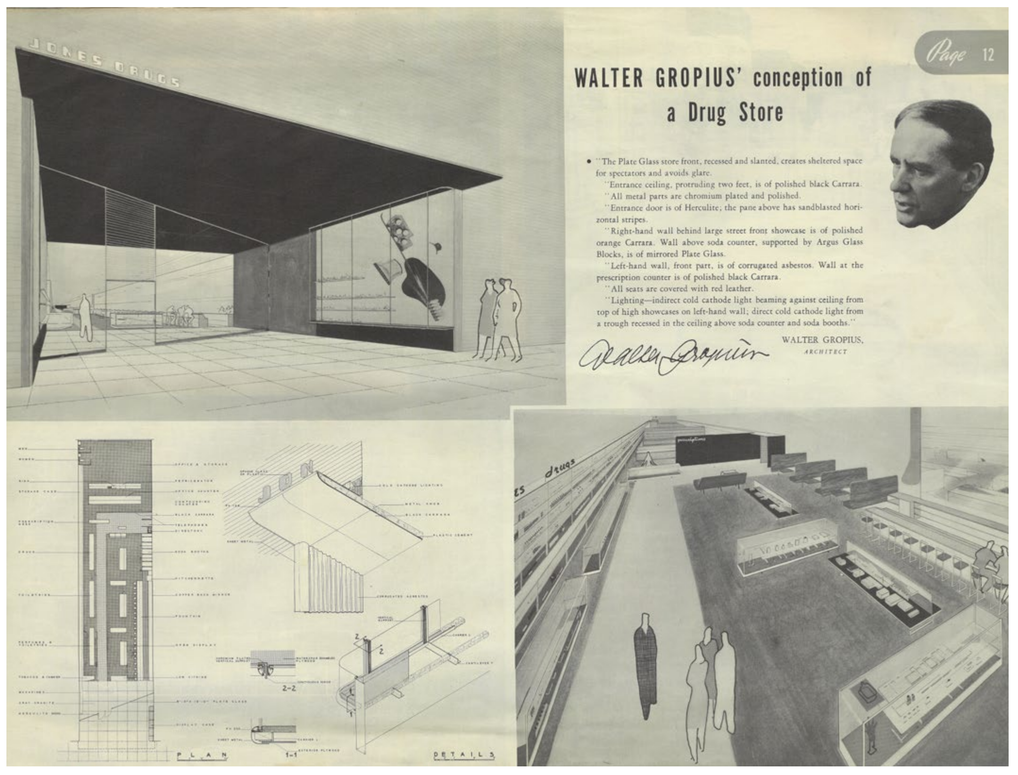

Figure 09.
'Walter Gropius' Conception of a Drug Store' in Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p.12 Architecture Museum, University of South Australia.

The drawing modes preferred by the Modernist designers usually included perspective, isometric or axonometric projections which were increasingly used in presentation drawings to illustrate the relationship between form and function.[75] This contrasted with earlier Beaux Arts drawing modes, which emphasised the plan, section, and orthographic elevation, with their preference for symmetry and axial geometry in drawing and design. As O'Gorman has recognised, in this period 'architects developed a simplified, often simply linear, graphic style [...] The new, simplified technique suggested a business-like method of problem solving', something that accorded with their functional approach to the problem of store design and echoing the clients' focus on design as a means to increasing business.[76]

Despite the lack of a complete set of architectural drawings for each project, those used on each page of the PPG portfolio go some way to communicating the proposed designs. O'Gorman, in his work on North American architectural drawings, noted that 'only multiple graphics reveal the various aspects of a design, no matter how simple the building: view(s), plan(s), elevation(s), section(s), and detail(s)'.[77] The absence of orthographic elevations and the prominence of the rendered perspective to illustrate

the building facades and interiors is noteworthy in comparison with the earlier glass promotion booklets. For instance, the earlier Libbey-Owens-Ford *Modernize Main Street* competition drawings of 1935 featured external elevation, plan, section, and details as the preferred drawing modes, with no interior views included. Notably, interior perspectives are prominent on each page of the PPG portfolio, used to illustrate the store design in a manner that was easy to understand and convincing for potential clients; on the same page, architectural and fixture details and plans spoke to the architects and designers in a language respecting their professional knowledge. With each layout effectively dividing the page in quarters, the flexibility given to PPG to utilise the images in different layouts for multiple purposes is clear. In the *Pencil Points* 1944 retail issue, the layout of the portrait pages fit the individual drawings and details within the journal's own style. While in PPG's promotional booklet *How Eye-Appeal Inside and Out increases Retail Sales* (1945), only exterior perspectives have been selected to illustrate store fronts of each retail type.

The drawing techniques and modes evident in the PPG portfolio demonstrate commonalities in the media used for rendering as well, but, interestingly, many reflect the Beaux Arts techniques and media many of the designers would have been familiar with from their training, including pen and ink, chalks, pencils, watercolour paints, or gouache. However, newer techniques are also evident with airbrush and several reversed-out drawings with white lines on a black ground popular in the portfolio. Collaged figures in Glazer and Rado's 'Conception of a Cosmetic Shop' point towards this increasingly accepted technique in architectural rendering [Fig. 10].[78]

The illustrative nature of the drawings in the PPG portfolio reflect its hybrid nature as both a design portfolio as well as an advertising catalogue, utilising unbuilt designs as images intended to convince the reader of the desirable nature of the PPG products specified within.

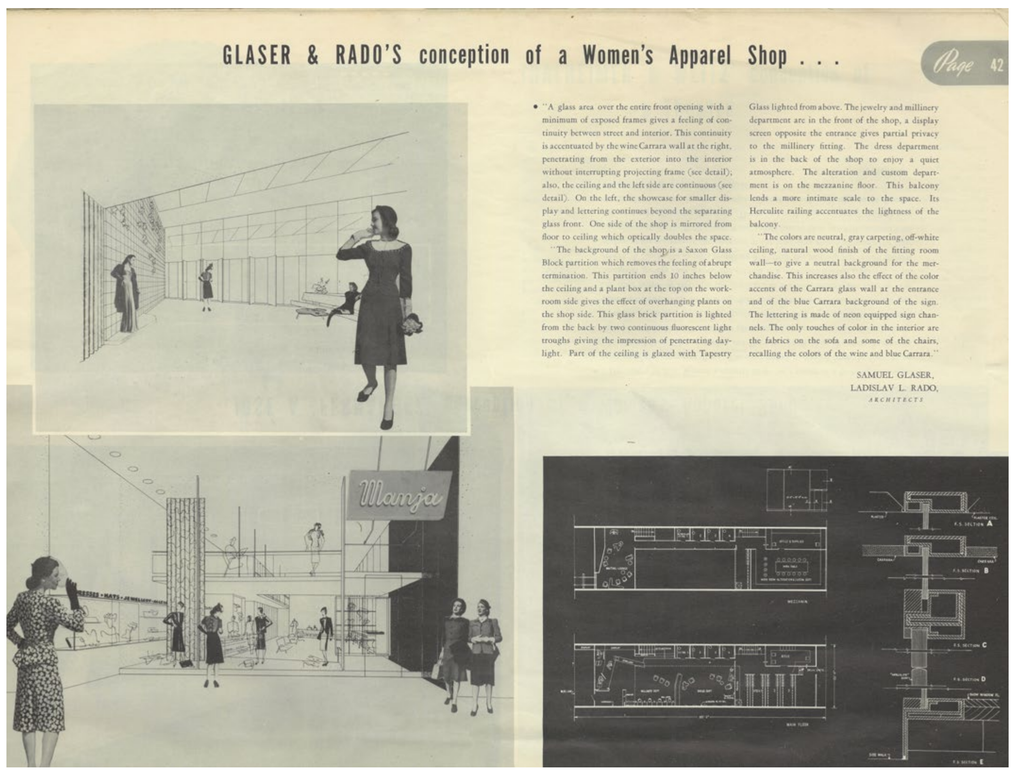

Figure 10.
'Glazer and Rado's Conception of a Cosmetic shop' in Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 9, Architecture Museum, University of South Australia.

architects and advertising

It was recognised by building product manufacturers that their advertising needed to appeal to two market segments, designers and clients, in this case store owners. These two segments, however, had different reading habits, with store owners unlikely to read design periodicals. One approach was for suppliers to advertise in retail trade journals such as *Chain Store Age.* Another was convincing designers to act as intermediaries between supplier and purchaser in recommending their products. Advertising for building materials functioned as a revenue stream for design periodicals and increasing use of images of unbuilt, competition, or ideal projects using specified building materials began to blur the line between advertising and editorial. Traditionally, advertisements were carried in the front and back pages of design periodicals; however, when material manufacturers sponsored a competition or provided content in the form of designs, these pages would appear editorialised in the main body of the journal. It was a synergistic relationship and by the 1940s the relationship between the design press, building material manufacturers, and the architectural and design professions had become an integral part of the functioning of the industry.[79]

Architectural periodicals from the late 1920s regularly published images of contemporary designs never intended to be built, from competitions for ideal homes to speculative sketches of emerging building types. Architectural historian Paul Hogben has investigated the history of building product advertising and found that beginning in the 1920s there was a move away from text, noting how 'the image came to dominate the space of advertising as advertisers attempted to encode products in the language of modernity.'[80] Architects and designers were very often open to promotional work for materials manufacturers not only as free advertising for themselves, but also because speculations and competitions were a way of keeping their hand in when there may have been little else in the way of work on offer, such as following the Depression or during the war.

The 1940s was a time when the architectural profession was beginning to accept self-promotion as appropriate conduct. For a large part of the profession's history, the advertising of architects' services was frowned upon. Under the watch of the American Institute of Architects, it had long been expected that 'reputation, as opposed to self-promotion, was the invisible hand directing architectural practice.'[81] However, this began to change during the twentieth century as the role of the architect itself changed, with them increasingly serving as 'consumer advocates', something used to advantage both the materials manufacturers and the profession. Andrew Shanken noted that 'The architect-experts had become pitchmen, endorsing products, [... and], the building industry now blanketed the public with advertising that served the architectural profession.'[82]

This was demonstrated in the PPG portfolio, where the featuring of designs alongside the designers' portraits allowed exploitation of the grey area between reputation and promotion. This offered architects 'public exposure that freed them from both the expense and the indignity of having to pitch themselves directly.'[83]

Within the PPG portfolio, design, product, and designer were combined together on the page. The use of the architect's image in the layout is of note and reflects an amendment of the American Institute of Architects rules in 1941 to allow a photograph of the architect to be used in advertising for building materials or services.[84] On many pages, photographic portraits of the designers and their signatures were part of the layouts, with the cover of the booklet a pattern of these signatures, adding to their fame and the notion of the celebrity autograph. This flattered the designers themselves, but also played to the potential client who was encouraged to see the modern designer as an expert, not only lending authority to the product but also being promoted as a 'starchitect' in today's parlance.

Manufacturers regularly used a range of materials for promotion, including letters and flyers sent to architects, designers, and business proprietors, mail order booklets and portfolios, targeted magazine advertisements, building product catalogue files such as appeared in *Sweets Architectural Catalog File* throughout the twentieth century, retail equipment directories, as well as visiting salesmen, films, and displays at trade fairs, product exhibitions, and in travelling caravans. As Hogben notes in his exploration of building material promotion, 'two concerns that come into play in the promotion of new materials and products to architects [... were] creating desire and establishing credibility.'[85]

> Credibility depends on technical reliance and also on professional, intellectual and theoretical associations and backings. Generally, advertising cannot contain detailed arguments but rather presents signifiers of integrity and trustworthiness: Images, messages and endorsements that provide an aura of seriousness and believability.[86]

It can be argued that in relation to the PPG portfolio, the architects themselves were a target audience, as it offered them not only crafted and artistically presented modern designs but also an image of

themselves. This was part of a wider trend, and it wasn't only glass companies that took advantage of the relaxed rules around using architects as experts to promote their products. A look through design periodicals of the era reveals advertisements by numerous product companies featuring images of architects alongside their designs, selling everything from carpet to steel.[87] It was also not unusual for material manufacturers to hire architects to create marketing material as PPG did, with Revere Copper employing Oscar Stonorov and Louis Kahn to contribute to their neighbourhood planning booklet *You and Your Neighbourhood* in 1944.[88]

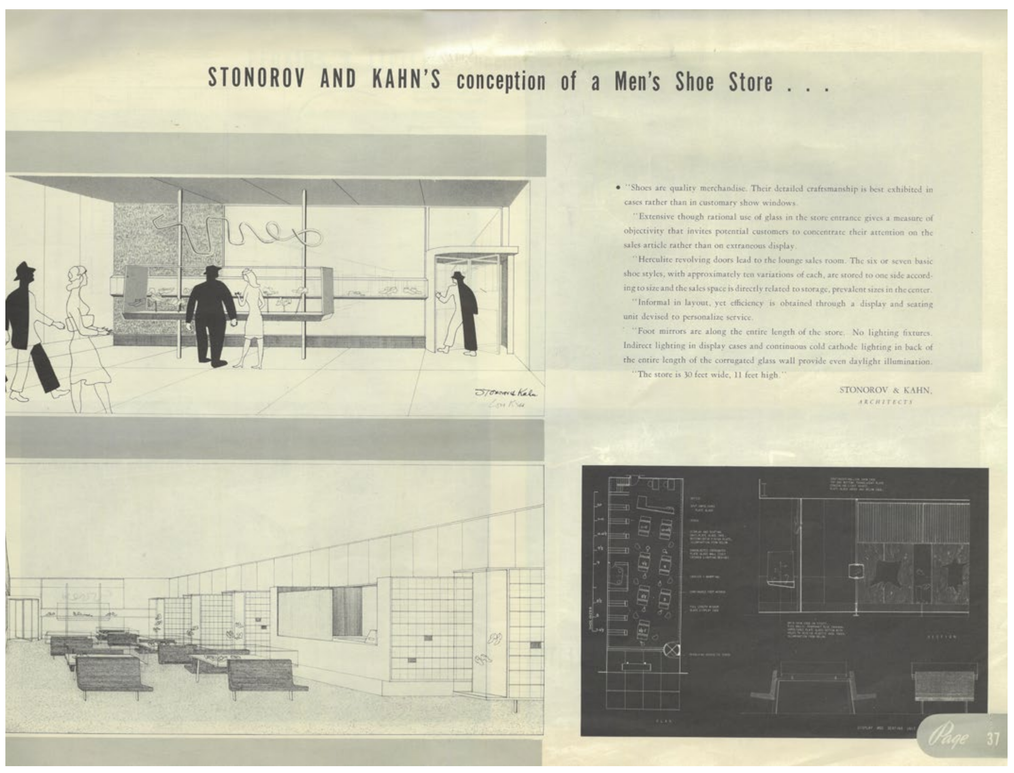

Figure 11.
'Stonorov and Kahn's Conception of a Men's Shoe Store', Pittsburgh Plate Glass Co., *There is a New Trend in Store Design* (Pittsburgh Plate Glass Co., 1945), p. 37, Architecture Museum, University of South Australia.

conclusions

While it is unknown if any of the designs from the PPG's *There is A New Trend in Store Design* were ever built, a 1952 building types study in *Architectural Record* stated, 'store design has gone through a complete overhauling in the postwar years', noting that 'the open front has become an accepted formula', also observing that the 'store is becoming more and more of a stage set which adjusts to seasons, sales volume and buying trends.'[89] Despite not knowing how these individual designs may have influenced built works, one that has been found likely to have influenced a built outcome is the 'Conception of a Men's Shoe Store' design by Oscar Stonorov and Louis Kahn. This has been thought by architectural historian William Whitaker to have influenced the commission for the Coward Shoe Store of 1949 in Philadelphia by Stonorov and Kahn with its all-glass façade and showcases [Fig. 11].[90] Yet, the realisation (or not) of these projects directs attention away from their impact not only at the time of production, but also today, as evidence of the ideological, cultural, technological, and economic contexts of their times.

Without an actual site, individual client, budget, or defined regulatory setting, the designers of these unbuilt retail stores could be free to experiment and express their design ideas and explore future-focused concepts. This essay has built upon Nevins and Stern's observation that while buildings 'are often torn down, neglected, renovated, or added on to', the drawing 'offers valuable evidence' about not only the context in which the designs were produced, but also the intent of the designer, albeit within the constraints imposed by the commissioning client, Pittsburgh Plate Glass Company.[91]

The types of information that unbuilt drawings hold the potential to unveil are numerous, including evidence of 'big picture' historical events or periods, such as the effects of war and economic conditions. Wider social and cultural indications may also be found in the unbuilt drawings, including traces of prevalent business or work practices, and, by interpreting the aesthetic cues present, intended cultural signifiers may be found. What they also tell us are the cultural and social assumptions the designers made about who the shoppers were likely to be, with well-dressed middle-class men and women indicated in silhouette in many designs. The status of building technology at the time of drawing production can also be uncovered through an analysis of the materials, and particularly the details. Moreover, the intended audience for the drawing can be intimated through the locating of the drawings in their context and exploring their role as marketing tools, with presentation views used as artwork to attract the eye.

The unbuilt drawings examined in this essay have revealed the ideas prevalent in post-war retail design as modified by the requirement for the incorporation of glass by Pittsburgh Plate Glass Company. Among the benefits of investigating these unbuilt retail design drawings is the snapshot in time they have provided through the incorporation of the designer's rationale in text alongside the drawings. Additionally, the primacy of presentation drawings and their effectiveness in explaining both the interiors and the store fronts has aided in unpacking themes, not only of architectural and retail design trends, drawing techniques, and use of building materials, but also wider contextual evidence of economic and social conditions that tell a more expansive story of their significance of design in history.

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