Fads, façade and face of building: a proposal for an urban university campus expansion

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Abstract: Preoccupations with the aesthetics of a building’s envelope, and the pursuit of technological advancement, have led to a singular understanding of the façade as a mechanical boundary. This investigation challenges the hermetic nature of the contemporary façade and its legitimacy as a subject matter of architectural design within the overall architectural discourse. Drivers for this project include the need to revisit historical precedents, the ambivalence of the label ‘façade’, and a speculative siting as a campus expansion of Victoria University of Wellington, New Zealand. The design response to the site’s topography via the theory-charged, re-oriented, and as a heterogeneous space, and threshold redefined, façade enables a novel way of projecting a building’s images without depleting the façade’s autonomy. The paper reports on the theoretical background and case studies and their application to the initial design stages.

Keywords: Façade; face; heterogeneous space; campus.

1. Introduction: the design hypothesis

Material innovation and environmental urgencies over the last twenty years have made notable advances to a building’s perimeter – the façade. However, this lead to a predominantly exclusive understanding of the façade as a pure and generally extremely thin hermetic envelope. These developments are conditioned by a willful ignorance toward the historical precedents that define the term ‘façade’.

Façade has predominantly shifted away from being purely the layer of environmental control and structural barrier between public and private through the Chicago Frame. Its catalyzing effect on the divorce between structure and surface promptly removed any bodily representation of hierarchy, legibility and symbolism (Sharif, 2003; Leatherbarrow, 2002). Hence this investigation concentrates on building surface and its dialectic between support and skin. As grasping for a historically rich and complex surface allows for emancipation form naive and reactionary ideologies (Sharif, 2003). The context of historicism and functionalism allows to reintroduce orientation and circulation into the purely through visibility and imagery understood façade. Surface becomes the site of formal experimentation.
As production and representation are in conflict in contemporary architectural practice the concern with the difficulties and opportunities of external surface of buildings has to begin with the theoretical and practical isolation of that surface as a subject matter of architectural design (Leatherbarrow, 2002).

This investigation examines the accepted understanding of the term ‘façade’. Particular attention is given to the architectural ambivalence that this label brings to our understanding of the faced as a technical as well as visually expressive approach to the building envelope. To achieve this the research begins with takes on Rowe and Slutzky’s presentation of the façade as a function of literal and phenomenal transparency. These explorations are modified through James Stirling’s unique approach to University architecture and campus organization. Which is shaped by his compositional and theoretical interpretation of a range of historical precedence (Lawrence, 54). While acknowledging the significance in their work this research argues for extending the definition of façade to accommodate – literally and figurative – a spatial dimension (ranging from macro through to micro occupancy).

Adding the contemporary preoccupation with visual aesthetics in architecture where the historic bodily representation has become obsolete leads to the opportune question of sincerity. The façade as a cover vs the façade as an expose of the interior. Conversely the verticality and geometry of the façade is challenged through its orientation: from the vertical into the horizontal, slicing through the interior volumes and extruding it out. This not only challenges the strong near iconic symbolism of a University’s façade but also offers a novel take on the axially of program distribution, access across site and the individual’s engagement with the façade geometry (Figure 1).

Figure 1: Bodily engagement with the Vertical vs Horizontal (Kuepper, 2015).

As part of the research-by-design methodology, this proposition is tested as a speculative addition to Victoria University of Wellington’s Kelburn Campus, Wellington, New Zealand thus rationally arguing autonomy for architectural surface.

Hence a student focused cluster of programs will be introduced, primarily targeted at post-graduate students. Through vertical and horizontal arrangement it generates a more direct entrance – threshold - to Kelburn Campus in its speculative siting. This is testing the reciprocal relationship between the overall threshold and its urban context and the internally focused facades. Both the theoretical and applied components of the initial design stages are presented.

2. The background story

Victoria University’s Vice Chancellor Grant Guilford’s vision is to expand the University by doubling student numbers over the next decade. Additionally the University recently purchased a campus adjacent piece of land which warrants a future expansion of Kelburn Campus. Hence the stretch of land leading up to Kelburn Campus provides a great opportunity to hypothetically test this architectural master’s research (Figure 2).
Given the location and nature of the site’s topography a facade development is required that challenges the ridgeline façade typology as is traditionally employed in a University setting. Hence site becomes the primary design driver in the initial design stages to explore the development of a hillside façade. This requires a constitutive stance towards the slope which will strongly impact the communicability of image not only through construction but also the process of appearance (Leatherbarrow, 2002).

Gordon Gee strongly emphasized that it is in the area of our physical campuses that a particular vulnerability exists as only a few short-sighted decisions need to be made (incorporating the latest building fad) before the physical quality of a campus reflects the scattered and distracted spirit and administration of the institution (Kenney et al, 2005). This demands the need to return to core values; Victoria University of Wellington’s mission is to undertake excellent research, teaching and public engagement in the service of local, national, regional and global communities (Dober, 1992; Kenney et al., 2005; VUW, 2015).

Architecture facilitates the return to the University’s core mission and sustains its values under the philosophical proposition that space and mission are synonymous (Kenney et al., 2005). Hence the University itself is treated as façade and contextualized against history. The research develops a continuous façade system transcending various scales to achieve greater circulation, orientation and increased connectivity. This is between Wellington’s City Centre below and Kelburn Campus, across Campus and within the individual faculty buildings it will comprise of. It becomes an urban threshold that shifts the notion of façade as well as positions the university and its image towards the city from the confrontational horizontal to the engaging vertical (Figure 3).

For Victoria University, in this research context, a design outcome of a staggered nature is envisioned. The aim is to not only establish a new image for the University but also provide space of opportunity to enable students to take control of their own education. Creating an intellectual home that provides for the multi-media classroom of the 21st century and facilitates a healthy lifestyle.
3. Methodology

Initial extrapolation of pattern in this research is undertaken in a scholarly based approach. The focus is on readings around the façade and surface terminology and analogies in architecture yet branches out into heterogeneous space. This literary canvassing brought forward a terminological scope of façade, threshold, transparency and interior space.

Following the initial scholarly approach a motif has tentatively been defined as ‘reconciliation of vertical movement across the site against geometry that is façade’. This reiterates site as a point of departure for design as the potential for the program to vertically transcend through existing spaces is recognized. This in turn triggers the necessity for a consistent method in the design to enable a visual conceptualizing of the project. Movement through and across segregated spaces suggests the notion of stepping. This is explored in a both literal and figurative manner with the aim of resolving issues of student movement across site and the University presenting itself through its facades to the public domain below. An initially envisioned outcome is of a building complex development scaling up the topography while allowing connectivity across site through threshold circulation within the domain that is façade (Figure 4).

Three highly relevant Case Studies have been analyzed to aid the in scholarly research identified principles of fragmentation and spatial stratification. To achieve autonomy for architectural surface under consideration of heterogeneity of space and elements the selected case studies have strong historic roots while challenging the norm of modernist spatial organization within educational spaces. Furthermore they negotiate the necessity of how the definition of a location involves a corresponding
act of dislocation, a centering of the building outside itself in favour of the overall organization (Leatherbarrow, 2009).

Additionally the typology of façade is revisited via massing and geometric studies to aid in an exploration and organization of the potential in the scale of chosen context and site. Thus a contemporary understanding of ‘threshold’ is applied to the site across multiple scales, orientating the public within Wellington through its strong image (micro-facades, internal facades and disoriented facades).

3.1. Scholarly approach – stirling as catalyst for Rowe and Slutzkys ‘Transparency’

Critical engagement with the theory of the façade enables this project to be more than simply a revivification of the debate on surface. As surface is the unconscious of architecture, invisible due to its overexposure (Chatterjee, 2014).

“Despite being a key part of the discipline, surface only occupies the interstice or the space of the unconscious in architectural discourse, from where it defends its legitimacy as architecturally valuable as opposed to visually pleasurable” (Chatterjee, 2014).

Transparency as point of departure is understood as an optical quality in both literal (materialistic) and phenomenal (geometrical) terms. The focal characteristic in Rowe’s argument is the ability for the layers of transparency to interpenetrate without optical destruction of each other (Rowe and Slutzky, 1997). This brings forward a continuous dialectic between fact and implication as depth and subtraction allude to the interior space, layout and occupation through fragmentary geometry and spatial stratification in the façade. As the third dimension that is architecture is unable to suppress these qualities, why does the façade consistently attempt to assimilate a two-dimensional existence? (Rowe and Slutzky, 1997). There is an ever present visual continuum across the internal-external threshold through external surface as a three-dimensional medium. The existing problem, however, is that idiosyncratic architectural projects have progressively become one of a sculptural total exterior that alludes to a two-dimensional existence (Hensel, 2013).

Focus on environmental control within the façade nowadays led to a denial of frontality of façade, creating an in-between spatiality belonging as much to the inside as it does to the outside. It becomes a potent three-dimensional instrument that simultaneously connects and changes opposite situations by being both passive (see-through) and active (seen) (Leatherbarrow, 2009). Adding this legibility of occupation enables the integration of openings into surfaces/facades and pushes to construct alternative frameworks for contemporary social practice. This is further explored through case studies.

Additionally to its visual ambiguity surface in the third dimension constitutes of heterogeneous qualities by being both superficial and pervasive, symbol and space, meaningful and functional, static and transitory, object and envelope (Chatterjee, 2014). The concept of heterogeneous space, relating to both surface and University, has an interchangeable terminology including ‘complex’ and ‘multiplicitious’. Thus it avoids neo-modern functionalism coupled to a minimalist architectural formalism (Hight, 2009). To further combat heterogeneous three-dimensional space to be purely seen as a product of formal operations Stirling’s geometry is consulted through case studies.

Foucault (1986) argues that we do not live in a homogeneous and empty space but in a space that is in itself heterogeneous through a set of relationships. These relations are architecturally expressed by ‘something’ (cloister/hallway/corridor) through which one passes, as means of proceeding form one
point to the next. Its defining elements could prompt temporary halt and arrangements of rest. This take on threshold and transitional space offers great insight into how vertical movement across site can be broken up and organized into a transitional hierarchy.

The invention of the corridor and its multiplicity of connection suggests a deliberate ambiguity to avoid conventional forms and prescribed interpretations (Hensel, 2013). Moving away from purely styling the building envelope to fit the interior directs the research towards the extended threshold: Distributing the threshold by not perusing a full enclosure with the outer layer as the exterior extends beyond the first layer of the multiplied envelope. This results in the distribution of the exterior-to-interior transition by increasing the number of layers that are partially or fully open with interstitial modulated micro façades. Hence spatial organization occurs via layering of multiple envelopes. Envelopes can therefore become spatial devices (Hensel, 2013) (Figure 5).

Surface architecture can provide distributed thresholds that articulate heterogeneous spatial and environmental conditions to make versatile provisions for habitation (Hensel, 2013). Principles for production of heterogeneous micro façades manifest through degrees of interiority. Most prominently the grid where two or more simple pattern are overlaid to produce secondary and tertiary effects, shimmer and transform as these patterns move in relation to each other (Hensel, 2013; Hight, 2009). This ties back into the initial function of transparency to “interpenetrate without optical destruction of each other” (Rowe and Slutzky, 1997).

Hight (2009) argues that all space is essentially interior volume considering heterogeneous spatial qualities in extended threshold conditions. By diminishing the difference between visible and invisible new ways of representing degrees of transparency of the porosity of boundaries may provide alternative ways of negotiating threshold in surface architecture (Barrie, 1999). This is where topography can become genuinely communicative as the individual building’s freestanding self-governance is sacrificed for the configuration of an ensemble. (Leatherbarrow, 2002).

3.2. Case studies

The selected three architectures bring unique and insightful value to the development of the project. Especially in relation to internal facades of extended threshold conditions, visibility and geometric mass as design strategies.

Herman Hertzberger’s “Centraal Beheer Development” (Apeldoorn, Netherlands. 1972) is selected to investigate at the reduced scale: micro-façades and their incorporation and impact on the internal program. Despite the basic geometrical grid applied to the overall layout of the building Hertzberger creates interesting and intrinsically potential laden zones for detailed development. This slots right into
the theoretical proposition of spatial organization occurring via layering of multiple envelopes. This will be applied in modelling and massing studies.

The interpretable zone houses extreme potential to be filled with program thresholds that articulate heterogeneous spatial conditions. Hence it is categorized as an ideal zone for micro-facades. Spatial stratification and fragmentary layering allows to not only look at the horizontal but also the vertical stacked organization of spaces as Hertzberger constantly keeps the human body in mind.

In particular these principles will be taken into consideration when negotiating program orientation, organization and design movements against the envelope.

While physical modelling and iterative/investigative open-ended small scale tectonic models are employed to kick off the technical part of the investigation the main aspect taken on from this case study is the thorough understanding and exploration of mass and form (Figure 6).

![Diagram](image)

**Figure 6:** Diagrammatic analysis of facade geometry (Kuepper, 2015).

Through diagrammatic analysis of their Vitra House project (2006) it becomes clear that Herzog and De Meuron are similarly very focused on the façade, in particular the detail and junctions within. While the Vitra House experiments with geometrical form in the vertical and horizontal it is somewhat hesitant to stronger articulate it in the interior.

![Diagram](image)

**Figure 7:** Diagrammatic analysis of plan (Kuepper, 2015).

Through more thorough analysis (Figure 7) it becomes evident that the carefully thought out plan design in relationship to the 3D orientation of the different complexes combats or this lack of resolution. I will investigate how the interior outline, layout and circulation can be achieved through the façade alone expended as a threshold within as the space itself becomes circulation. Space starts to orientate people in space by acting as a threshold that simultaneously divides and joins level. Elevation of levels will be transferred when façade threshold is applied to the site below Kelburn Campus integrating with the hill. This integration will be resultant and evident from the massing studies.
Stirling and Rowan’s competition entry (Figure 8) stood out through its unique take on campus organization as response to the post-war increase in student population and University expanding its capacity (Lawerence, 2012). It featured a square walled-in two-storey residential enclosure on an otherwise vastly open site. Proposed to be encompassed within were two main residential blocks with their own internal courtyard and two composite buildings. This impressive architectural idea was driven by the courtyard internal buildings rising above the enclosing peripheral wall of rooms (Figure 12). Yet is was this bold move that the judges saw as an undesirable grouping of undergraduates despite the courtyard predominance and internal orientation being the main design strategies (Lawrence, 2012; Stirling, 1975).

These key design decisions following a strong axiality that provided a novel circulation and orientation within the complex and the challenging scale make this a highly relevant case study for this investigation of vertical movement through facades. The internal environment aims to be private, enclosed and protected by solely providing staircase access yet when viewed from the outside still maintaining a degree of monumentality. This is achieved through the slightly more complex silhouettes of the interior buildings. Circulation up and through the external ring of accommodation is achieved through levels of elevated walkways/cloisters with staircases leading into the overall internal courtyard (Stirling, 1975).

Additionally it is not only Stirling’s novel take on campus organization and circulation that gives value to this investigation but also viewing this project as a response to growing historicization of functionalism (Lawerence, 2012). Stirling, ahead of his time, moves away from a strictly modern pedigree to incorporate a range of historical precedents by locating modern vernacular qualities within them irrespective of their time period. Particularly in this project where he desires to abstract the universities’ core principles (Lawrence, 2012). Through repetitive design moves across scales he diffuses the rigidity of the courtyard yet enforce it as an overall principle through fractals: courtyard within a courtyard – thus accentuating circulation. This highlights the inverted interiority of the overall courtyard (Lawrence, 2012). Rowe praises it to be an impeccable thesis as to what a college should be as its form corresponds to some disposition which the mind can immediately digest as a functional expression of use (Arnell and Bickford, 1984).

3.3. Massing studies

Massing studies on a 1:500 routed site model explore the organizational gesture of movement uphill while testing iterations of modules of a slipped grid in plan and stepped grading in section against the topography of the site. This provides a geometrical mass framework (Figure 9) to situate the programmatic development within and against.
4. Results of initial design iterations

The main preliminary result of the theory and case study informed massing studies is the effect of rotating the orientation of the geometry by 90 degrees from the horizontal into the vertical. This flip in orientation of the façade versus the now novel experience of and engagement with the façade brings forward strong options for resolving vertical movement uphill.

Through explorative physical modelling of vertical movement initial design iterations of breaking up the façade under the premise of transparency are visualized. This relationship of the angular dynamic towards the existing Kelburn Campus with its movement and alignment across the site is explored by breaking down the site into modules. Thus threshold is brought back into focus through the concepts of gateway, façade and educational space ranging through the layers of heterogeneous space through to internal micro façades (Figure 10).

5. Conclusion and future outlook of research

This paper has taken a brief look at the initial stages of the author’s Research-through-design Master’s Project. It argues for a pursuit of the redevelopment of the façade into a heterogeneous threshold ranging from micro to macro occupancy. Given the programmatic context of a University campus this research could develop into a modular prototype for an international context by incorporating multiple views on modern University and campus. The next steps to undertake require careful consideration to avoid losing the relationship between façade and building as, if completely removed, façade would become an entity with its own facades. Hence program is induced to refine massing studies and develop a hierarchy for program organization, public thoroughfare, and vertical and horizontal circulation across site. Continuous shifting of scale throughout the research will lead to a strong, legible and technically resolved outcome. Conclusively it is expected that micro- and macro-facades have reciprocal design principles where their layering is transparent yet interpenetrates without optical destruction of each other which is integral to the relationship of technology and symbolism.
References


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