Seeing is Believing

A design process of visually experienced truths; limits, advantages and lies

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Abstract:

Current architectural practice gives unarguable truth to the dimension, and also to the orthographic methods which are aligned to the dimension. The same orthographic conventions have come to be the means by which architectural practitioners conceive, communicate and construct our realised environment. As measurably truthful as these methods are on paper, the logic to also trust these tools to produce our spatial environments must be questioned. For the orthographic drawings, so unarguable to modern, professional practice, are in fact non-experiential, physically unattainable abstractions.
What is suggested is that truth, not of dimension, but of visual experience be prioritised. To use design, not to quantify built space, but to design the qualities of that space. This idea has developed into an architectural proposal that critically investigates the advantages, limitations and the perception of lies in a visual design process. Specifically a process that gives priority to the user of the architectural result, by the use of design tools restricted to those which are representative of a visually experienced reality.
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This research study has focused on design methods representative of the visually experienced reality, and the application of these methods within an architectural design process. This explanatory document provides a critique of the applied methodology used within the design proposal of a Visitors Information Centre Complex in Oneroa, Waiheke Island.

This study originated with a broad scope of interest into the place of the visual within the architectural design process. This document outlines the evolution of the methodology being interrogated for its potential in creating an architectural solution. A solution that is able to be reflective of a chosen sites visual character, while being consistent with a methodology that is representative of the physically attainable vantage point of a user’s visual experience. A research question challenging current architectural design process emerged from this methodology. These influences resulted in the following research question.

Can a design process restricted to a methodology representative of lived visual experience propose an architectural solution of alternative outcomes to a standardised design process?
Objective:

The objective of the research is to act as trial of design process, intended to bring awareness of the effects of design methodology on an architectural outcome. In doing so, highlighting the blind spot toward current architectural design processes that lack the ability to question, argue or criticise the currently accepted model of orthographic drawing as the standard method of architectural production. An objective of this study is to bring academic validation to methodology opposing orthographic drawing as the primary design method to develop our built environment.

This study gives validation to the visual experience as a design method, posing a question of the necessity of orthographic representation, instead, utilising visually experienced representations as sole means of architectural; proposition, production and communication.

The research seeks to provide an academically defensible approach to designing by visual assessment. An assessment of the factors that comprise the critique of the limitations, advantages and lies has become evident throughout the application of the visually prioritized design methodology. Visual representations are compared against the study of orthographic principles

Scope:

The scope of limitations for this research is:

- To give assessment only toward those factors that influence the architectural outcome or method if they are made evident throughout this design proposal.

- To assess against known properties of orthographic principles as an assessment tool.

- To allow an open architectural design method to be explored, critical only to the need to adhere to principles that reflects the visual representations of a visually experienced reality.

- The project is seen as a design proposal, yet offers assessment as to the validly of the method in application of architectural production, i.e. realisation of construction
Architecture must place its truths under scrutiny, particularly the truth of the tradition of architectural representation.

Peter Eisenman¹

1) **ORTHOGRAPHIC REPRESENTATION**

1.1) **ABSTRACTION**

‘The plan...deeply embedded in architectural practice, and accepted so uncritically that we fail to comprehend the processes of reduction at work in the plan.’

Orthographic drawings, as a method of design, dominate current architectural design. The plan, section and elevation are each abstractions. They are conventions of reduction, disrespecting spatial distance which leads to views never attainable in a lived experience. Even the use of the term ‘view’ is false, for the orthographic has an impossible non-vantage point, one that falls outside of what Leatherbarrow defines a view to be, a ‘visible aspect of built construction’.

The blind acceptance of these tools as a means of designing spatial experience seems a perverse pursuit.

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3 Ibid. p.335
1.2) Non Experiential

Through reduction, the plan fails to adequately reflect the human experience of life.⁴

An orthographic method does not account for visual judgements that would be experienced in a built reality. Orthographic conventions ignore conditions of; Peripheral vision, physical vantage point, sight lines, perceptival distortion and haptic⁵ relationships to name a few. The abstracted view is reliant on the designer to mentally re-account for such considerations, distancing the designer from the built experience of their own product and from any dialogue with a client not versed in architectural convention.

“As a consequence then, of technique and practices within the office, architects grow increasingly distanced from the world of lived experience.”⁶ p.10 Leach identifies this blind spot in architectural design method. This highlights an unwitting slide away from experientially considered architecture caused by the unquestioned methodology of drawn representation is the subject topic of research project.

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⁴ Ibid.p.335


1.3) **TRUTH AND PRODUCTION**

There are advantages in the dimensional certainty that the orthographic possesses. Advantages can be found in line drawings which act as a vessel of dimensional instruction, if the intent of the drawings is specifically for communication toward built production. This quantitative attribute aligns the orthographic drawing with the aims of production. Leach references Baudrillard in naming the Industrial Revolution as the starting point of this preoccupation with production. It is this notion of production and the methods which privilege it that is being questioned.

“The contemporary world is dominated by “production.” “Everything,” Baudrillard notes, “is to be produced, everything is to be legible, everything is to become real, visible, accountable; everything is to be transcribed in relations of force, systems of concepts or measurable energy; everything is to be said, accumulated, indexed and recorded...”

It is the position of this project that the methods used within the design process and the communication of the designed result should respect the intended outcome. By identifying the outcome, or architectural solution, two types of architectural explorations are distinguished; those intent on production and those intended as design proposals. In the case of this project the intended outcome is a qualitative design proposal, not specifically for production.

The purpose of challenging the notion of production is to gain a critical perspective on the methods used in an architectural design process, and their **effect** on the architectural outcome.

The Latin derivative of production translates to “*make appear.*” Within this argument, to ‘make’ is to concoct an appearance. A concocted appearance is evident in the abstract view of the orthographic drawing. This project seeks to show a lived view rather than make an abstracted view that is an unnecessary lie in the representation of a design proposal.

This project questions the truthfulness of orthographic drawing in relation to a design proposal, accepting its usefulness instead for production, being quantitative and dimensionally unarguable. Yet according to the values of this study, orthographic representation is deemed to be untruthful to reality, and as such the logic of designing environments of spatial experience through such means is rejected.

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7 Ibid. p.73
8 Ibid., 73.
9 Ibid. p.73
2) PERSPECTIVE

2.1) PERSPECTIVE AS VISUAL EXPERIENCE?

Vision has been privileged over other senses since antiquity, yet perspective has only been the understood mode of visual representation since Alberti’s \textit{perspectiva artificialis}\textsuperscript{10} in the fifteenth century. Previous to this, the first representation of an understood convention of depth, is found in medieval painting. By implication the seeing public, cannot have seen nor would have understood perspectival representation before this time\textsuperscript{11}. Because of this fact, perspective can be seen as just another convention in the same fashion as the orthographic. Samuel Edgerton characterises perspective as ‘the most \textit{appropriate} convention for the pictorial representation of “truth”’ within ‘the Renaissance paradigm.’\textsuperscript{12}

The perspectival image takes precedent from several eras of architectural history. Reference must be given to precedent of this style of visual research. The renaissance architects and set designers, the picturesque of the 18\textsuperscript{th} century, Gordon Cullen’s ‘\textit{The Concise Townscape}. Each contemplating on the frozen image of the perspectival representation as a means of depicting or shaping the built environment.

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\textsuperscript{10} Alberto Perez-Gomez and Louise Pelletier, \textit{Architectural Representation and the Perspective Hinge} (Massachusetts Institute of Technology, 1997), 73. pg.10


2.2) PERSPECTIVE AND TRUTH

Truth has been central to the inception of perspective, taking origin from the search of truth, specifically quantitative truth. Architects of the early Renaissance such as Brunelleschi, Filarete, and Francesco di Giorgio were driven by a search for truth in revealing a “measured” reality of worldly experience. Their Intention was focused specifically toward the viewed world. Francesco di Giorgio Martini applied Euclid’s method of triangulation to measure by proportional relationship, seeking the true nature of volumes, unknown heights, depths and distances. He was primarily a designer of fortifications, his treatise Architettura, Ingegneria e Arte Militare sought to give measured validation to viewed scenes, producing perspectives of urban environments. Martini shares with this research in using proportional contextual information (however not measured) to depict perspectival environments.

Perspective is pictorially located closely to, and shares much with the photograph, yet the perception of truthfulness to reality differs largely between representations. The common phrase ‘photographic evidence’ displays the stature of truth within photography. In current building consent legislation, Auckland City Council will not accept perspectival drawings as building consent documentation, accepting instead camera collages-montages as legitimate documents. A questionable standpoint, especially when the ‘photographic’ images have been digitally doctored, and open to and artistic, reduction transformation and iteration. If this is the benchmark of visual truth in practicing architecture, ‘Why is there such widespread mistrust of all those architectural drawings which fascinate the eye of the beholder with their striking color effects and their beauty?’

‘The pretence of the Renaissance theoreticians was unequivocal: perspective is a form of objective representation of the world which can be construed in mathematical terms. At the same time it leads to pictures which closely approximate the way we see the world, i.e. objects in space.’

Holländer summarises the historical backdrop and frames the project at hand. It is within this framework that this project locates itself, between the objective mathematical construction of the world and output of approximated images of the viewed world. This results in a compromise between objectivity and subjectivity, a blurred boundary of quantitative and qualitative.

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13 Perez-Gomez and Pelletier, Architectural Representation and the Perspective Hinge. p.21
2.3) PERSPECTIVE AND THE COMPROMISE OF TRUTH

Truthfulness is sought by identifying the limitations of perspective to represent the lived experience, and its usefulness within a design stream. Both perspective and the methods that oppose it are questioned.

The method of freezing an otherwise a visually kinetic experience into static images for the purpose of aesthetic and formal judgement relates to a truthfulness, even if this truth exists in a momentary lived experience. An experience explained as; ‘it can hardly be doubted that ‘to close one eye and hold the head still at a single predetermined point in space is not the normal way of looking at things’.

To compromise on truth is to lie or deceive. If the designer presents only selected view frames either to themselves or a critic, then the capacity to deceive exists. Guarini, architect of the eighteenth century, documents this line between representation and deception, warning architects ‘against abusing perspective and concealing the truth of which architecture is capable.’

18 Perez-Gomez and Pelletier, Architectural Representation and the Perspective Hinge. p.68
3) **PROJECT: WAIHEKE ISLAND VISITOR INFORMATION COMPLEX:**

The project is related to site and building function: an island site of strong and identifiable visual character, and a visitor information centre that has the purpose of reflecting that character. The building is part of a community complex; this complex has been designed according to its visual presence in the landscape and streetscape, aiming to attract unfamiliar users.

The building will function on the basis of the visual also, navigating the user by sight and visual attraction lines to the differing areas and sub functions of the complex. The resulting architectural solution will encapsulate the visually and experientially derived qualities of the island. Providing a user orientated visual experience intended to be richer and obtain higher visual clarity of spatial movement in comparison to a scheme achieved though orthographic representations

**Phases of Process:**

1) To search within a wide scope of drawn, visual representations to find a design method that could best represent the islands identifiable, visual character.

2) Use drawn methods to document key visual and experiential impressions

3) Using the visual information gained from 1) and 2), produce an architectural solution generated and refined by perspective; selected as the method representative of the lived visual experience.

4) To use the design tools of perspective and physical modelling as representatives of the lived experience to design a functionally and contextually responsive scheme

5) To design a building that is experientially responsive to visual context and function by means of methods that are exclusive to representations intended to reflect the visually experienced reality.
**INTRODUCTION: WAIHEKE ISLAND VISITOR INFORMATION COMPLEX:**

The designed scheme is a relocation and expansion of existing community buildings into the commercial township of Oneroa, Waiheke Island, in Auckland’s’ Hauraki Gulf. The key factor is the provision of information and guidance; providing information of several types; touristic, historical, movement paths and knowledge of islands experiential qualities.

**Aims of Architectural Solution:**

To propose a building that reflects the visual and experiential character of Waiheke Island.

To propose a critically proportioned landmark building/ tower of visual prominence that provides visual direction to aid movement of unfamiliar users toward the town strip.

To highlight access toward the adjoining shoreline of the town.

**Functions of complex:**

- Visitor Information Centre
- Public Toilet
- Museum Information Spiral
- Exhibition gallery/ Functions Venue
- Scenic Lookout tower
- Local Radio Station Booth
- Public Space/ Café

Oneroa Township, (2005)
The scheme found precedent in Geddes Tower (1892-1930), Edinburgh, a precedent in the intent and the execution of the landmark and information tower. In function and in ideology, Geddes Tower shares with the designed Waiheke Information Centre. Patrick Geddes designed the experiential and learning tower and insisted on the journey to the top. ‘The exertion of climbing makes one’s blood circulate more rapidly, thus clearing fog out of the brain and preparing one physiologically for the mental trill of these outlooks.’

His experiential learning tower is intent on the transfer of information of place to the visitor using differing levels to educate user. Different experiential conditions are used to heighten the lessons imparted on the visitors.

The designed complex at Waiheke shares the connection of utilizing common human attributes of curiosity and peoples “drive towards height”... people’s appetite for experience using lines of sight and glancing view shafts to lead visitors. And provide information via directed sight paths.


* It is not the intention of this explanatory document to outline each step in the creation of the architectural solution, but rather use the reflections of the project to provide a critical reflection as it pertains to the research topic.
3.1) **SITE:**

**Oneroa < Waiheke Island < Hauraki Gulf < Auckland < New Zealand**

The Visual themes and motifs which are important to Waiheke Island are:

- The visual openness of the ocean and the Islands’ coast inherent with consistent arrival vantage point.

- Contrasting the above theme with the inner islands enclosure of valley and bush which form veiling visual screens, containing varied vantage points offered by vistas on hills and valleys in both elevated and downward terrain conditions.

- The forms of access which cater to the steeped topography of the island. The access routes have an innovative character due to the lack of infrastructure in private and public access paths. The pictorially surveyed topography has dominance over civil infrastructure.

- The documented process of change in the access routes is a visually relevant theme. Access is becoming more related to mainland infrastructure levels, changing its relationship with the topography.
- The colour and application of local quarried stone as base building and civil material.
- The colour palette from local surroundings able to be applied in perspective renderings.
- The patterning of the landscape by vineyard striations and olive groves/ the obscuring of landscape by forested areas.

The factors which are important to the chosen site are;

- The specific site location in the town strip of Oneroa contains several important visual factors that have shaped the buildings form.
- Commonality of approach; north and south ends of strip town. Where the bulk of the people traffic will be arriving from is dictated by the axial town strip. The approaching view shafts give contextual importance to the heights of the adjoining buildings that act as visual barriers to the site.
- The currently vacant site: the sole built and visual aperture in the developed town strip is important with regard to views out of the contained streetscape towards the ocean and horizon. The decision to preserve the visual release already created by a built forms absence was a formal driver.

- The steep topography that falls away from the street side meant an adherence to viewing position in the perspectives. Low and high vantage points enabling design from multiple elevations.
4) METHODOLOGY IN PROCESS:

4.1) BACKGROUND TO ISLAND QUALITIES, HOW TO RECORD AND VISUALISE

“From the standpoint of visual messages, difficulty in reading - which is an obstacle to communication - may sometimes be just what provides a denser, more fertile grasp of the form of the message.”21 p.10

It is the reading above which summarises the intent of the early works produced in the research. Drawn and painterly pieces serve as symbolic representations of the visual, viewed experience, intended for architectural production through a drawn process. (work.1) The process was aimed at extracting what was coined ‘visual motifs’ from the site. These motifs are defined within this work as commonly repeated visual features essential to the visual character of the island. Elements that could come to represent the site once iterated and applied architecturally.

Criticism of this method is the level of abstraction. The abstraction opposed the desired intent of a representation readable to the user. The building was intended to be visually identifiable to the place of origin, even at the prospect of bordering on the literal.

The method of drawing was distinguishing the important visual elements but the response to the path that the paintings were heading toward was a high level of abstracted translation that was beyond the scope of the lived experience. As a means of process then, the technique sought a method that visually tied more directly to the island.

The drawing (work. 2) was aimed at site specific conditions; Light quality, a perspectival description of access, cartesian mapping of the island and the pictorial use of symbolic visual motifs, all of which extracted from the site. This drawing has less abstraction than the previous figure, using the identified visual site influences more directly. The drive toward more direct site representations was a response to (work.1). The competition between 2D and 3D representation in (work.2) refers to this drawing as a precursor to the specific targeting of vantage point, a defining aspect of the methodology.

Analysis of the drawing and the embedded symbolism related to the island was beneficial to the project. It established an investigative mode of visual research. The act of drawing allowed an active response of visual translation as opposed to a simple identification of existing visual condition in photography. The key visual elements translated became usable motifs that were taken through to the completion of the design project.
‘The translator must take as his aim to give his reader the same image and the same delight which the reading of the work in the original language [site context] would afford any reader.’

Lefevere was commenting on text translations, identifying the author as responsible for the translation between mediums. The issue of translation/iteration was explored in this research, view. The issue of direct representation (perspective drawing) was occurring simultaneously to abstract pieces the direct comparison between methods have a reviewed conclusion relates to the direction of the project. The perspectival translation relates to visual truthfulness rather than abstraction for a project with aims of character reflection. As seen by (work.3) the qualities of the scene were able to be reflected and highlighted by weighting of drawing emphasis. The methodology reflecting the vantage point and the visual screening and depth that was deemed an important characteristic element of the observed piece.

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5) CRITICAL APPRAISAL:

5.1) THE ROLE OF THE VANTAGE POINT AND SIGHT LINES:

The viewed vantage point is what distinguishes the viewed experience from orthographic drawing. It is these devices, inherent within perspectival drawing and scaled, physical modeling that allow the designed solution to target the experiential. As design devices they also summate to significant factors that dictate the *advantages, limits and lies* inherent within the methodology.

The vantage point gives acknowledgement of the viewer. The viewer is present in the kinetic interaction implicit with a modelled form, and in the fixed vantage point of the perspective drawing. The fixed and the dynamic have altered properties and allow a differing, yet fundamentally comparable design approach.

The fixed view allows a contemplative and considered viewed angle in a style similar to Gordon Cullen’s sketches\(^{23}\). The viewed fragment of vision is selective, as opposed to a unifying plan drawing; a fragment requires referential information to place the location of the image. The method takes the approach of multiplicity, the production of a series of drawings to account for pictorial information by the change of vantage point. This technique *partially* overcomes the problem of fragmented views, in the resolving of more complex spatial issues. The term partially describes the infinitesimal angles which available to select the view of the modelled form or building from.

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Dynamic views came from modelling the 2D image as in (work.3), leading to an acceptance of the design method of scaled, physical models which give a kinetic aspect to the process. The moving vantage point used in viewing a physical model keeps within the established design restrictions of experiential representations. Models also allow a wider scope of design resolution in constructional and dimensional certainties existing as objects which are subject to conditions of the physical world i.e. Gravity.

Vantage point is the key device in visually engaging with the user and realised architectural outcome.
5.2) Measurement by Eye

A design has been arrived at by a drawn, not measured, method of perspectival representation by contextually proportioned spaces and massing. Specifically, proportional to the contexts of the existing built environment and the perception of the bodily. Heights and depths are created by reference to the horizontal eye line and to the viewed experience.

This method summates to designing by visual approximation. Visual approximation still employs the use of traditional techniques of geometric construction of space, using the horizontal eye line and vanishing points. The issue of depth has remained, in this project, an approximated representation viewed reality, relating to collected visual experience and intuition.

However, it is the important assessment of the viewed spatial effects that informs a haptic sense of measurement. It is spatial quality that is strived for in deciding a space or masses capability to be dominated, dominating, overbear, direct, inspire and most importantly for this project, to inform. A measurement of the qualitative takes place in this method and it is that which is of advantage toward a design proposal.

Intuition: ‘Direct perception of truth, fact etc.’ By definition, the intuitive perception of perspectival depth relates to a qualitative truth. The architect can design spatial propositions similar to a scenographer, yet always conscious of the physical creation of architecture ‘ to be realised materially and in relief’.

Previously defined terms of this research distinguished between a design proposal and design production are applicable here. A proposal is a design of architectural intent, an overlap of concerns occurs where architectural intent has an implicit emphasis toward a produced building. And as such the consideration, if not the exact measurement of structural and service concerns are subject to the designer’s ability to mentally account for these factors in the design.

To use the images to construct and modify the depicted environment toward architectural intent involves the placement (designed measurement) of elements exposed or concealed by the vantage point. This is a powerful tool, providing a process that gives critical feedback to the designer to achieve the aims of the project brief. And is applicable to


25 Perez-Gomez and Pelletier, Architectural Representation and the Perspective Hinge. p.22
the function of the information center in providing visual access and links to direct people and portray information.

The danger in approximation is to lie to one’s self as a designer, this can be minimised by the discovery of discrepancies between iterations. The loss of comparative spatial quality is what is being assessed and refined by taking advantages of the respective mediums.

The model is the means which gives physical validation to the drawn approximations of measuring by eye. Without the need to turn the perspective into a unified plan, a model can represent the same vantage point of a constructed perspective. This provides certainty to designer and critic alike. The model has use in the testing of conditions described in the drawn reality, conditions which are inherent properties and advantages in the modeling technique; construction plausibility, materiality, light condition, view multiplicity.

Without the testing of spatial quality the effect prescribed by the drawings can be seen as assumed and not investigative of its true character.
5.3) Perspective and the Viewing Angle

The viewing angle is a property of perspective drawing and the modeled form. It requires the manipulation of both the viewed vertical axis and the viewing angles along the horizontal axis. The flexibility in both perspective and infinitely flexible viewing angle inherent in the viewing of models is an advantageous tool of the chosen design method.

A selection of view allows the modeling to translate into drawn perspective.

It must be made clear the position of this research that it is viewing angle that is being interrogated not the method of perspective drawing. For this reason the study is opposed to the idea of representations from physically impossible vantage points, not of a plan but the perspectival view from vistas only attainable from an aircraft as in left hand image. The views provide a viewed totality but do not represent what the built reality will be like. This calls into question the justification of these representations of unnatural vantage point, and in denial of the experiential.

The viewing angle is a particular aspect of design that was encountered as an advantage to experientially based process. The viewing angle has a significant effect on the proportions used in the scheme. Viewing angle relates to the formal assessment and to the spatial quality.

The viewing angle encompasses the talked about multiplicity of views that produce a validity of representation and aim at truthfulness and clarity of comprehension between the otherwise autonomous spatial representations.
5.4) DESIGNING IN FRAGMENTS

A fragment; ‘an isolated, unfinished, or incomplete part’. Designing with perspective produces visual fragments of a scene. Qualities are; fixed, inanimate viewpoints unable to directly associate with information outside of the defined visual field. The fragments retain an association to the peripheral information of the depicted scene, not directly but by links to other drawings. This occurs in the description of the same objects or spaces in separate drawings. The comparison between perspectives drawn out of the same, mentally constructed model can both strengthen and find limitations in the method.

The perspectival method is strengthened when there is visual correlation between the images, making the building comprehensible to the critic. Comprehensible means to be able to spatially locate the relationship of one image to another. This can be achieved by key, legend or by the repetition of included scene element. It is by critique between drawings and models that the lies made possible by fragmented viewpoint become accepted as visual truths. In a process of presentation, any discrepancies between representations can cause a rift in the understanding of the true, represented intention. Uncertainty as to which drawing is correct or the intended version creates suspicion toward the series of drawings and method of presentation as a whole.

As a component of the perspectival method of architectural design, fragmentation is demanding of the designer. The unified whole of the building is required to be mentally retained and updated with design decisions and changes before and during the production of drawn and modeled works. Architectural predecessors have side stepped this issue.

“Villapando, for example, despite his explicit interest in perspective as a way to visualise buildings, used orthographic projection to reveal this implicit order in his representation of the Temple of Jerusalem, for it reproduced the image drawn by the hand of God.”

Villapando uses the god like position to see past visually obscuring elements of his design, in doing so avoiding his original explicit interest using instead religious justifications to make use of supplementary design methods more suited to comprehending a building as an entirety. By avoiding the dedicated pursuit of perspective in the design process, Villapando becomes another example the role of perspective was relegated to narrative and decoration.

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27. Perez-Gomez and Pelletier, Architectural Representation and the Perspective Hinge. p.266
Challenges to the design process include the challenge to receive critical feedback during the design process. Without a comprehensively presented array of perspective drawings the critic has little access to the entirety a building to critique. A standardised design scheme will have the critique of plans; site/floor and critical sections for assessment of structural, planning and spatial layouts, elevations to assess quantified proportion to street front, and technical details for construction method. What this project offers the critic is reflection on snapshots of views. It is a form of critique similar to what the user will have, in specially designed moments within the buildings journey. In this way the process hones the eventual design toward a more user sympathetic outcome.
5.5) **Spatial Quality/Experiential**

It is the visual that dominates the assessment of spatial quality. A qualitative spatial assessment includes the visual concerns of: haptic sensibilities, materiality, light quality and atmospheric conditions. It is the exploration and assessment of qualities such as these which must be tested.

To test is to spatially assess. A significant amount of the effect is a pictorial rather in formal properties. This is an important factor in considering the limitations of the method. A formal property can be replicated easily. A ruled lined intended to define a space is replicable. A depicted spatial quality that also interrogates light quality and materially is open to a more subjective approach. *(Work.5)* this figure shows an intended spatial quality, yet the message being delivered is based on pictorial or artistic representation to deliver the intention.
5.6) **The Perspectival Object.**

A visitor centre lends itself to an analysis of contextually assessed proportions and massing because of its functional need for visual prominence. What the perspective method allows is a direct assessment of the design in relation to its physical context.

When the object is first visually perceptible it becomes a part of the visual urban fabric of the township. Control of that particular moment is important. Drawn trials of breadth and height have established governing proportions of the exterior object to control the visual impact.

A perspectival representation is able to provide contextual, visual information to the designer by the relationship between visual barriers of the site and the placement of massed objects. This formulation of object making requires a qualitative assessment of the unfamiliar users viewed experience, taking into account arrival paths (work.7) and heights of topography to formulate the architectural response. In this way, the users concerns are prioritised; where the vantage point and the needs of the building are able to be manipulated by trial of perspective.
Context can inform particular details of design, the architectural language of the adjoining and background buildings is able to show what the user will see, informing decisions to reflect or contrast the context. An example can be seen in the heights of the elevated decking prominent of the ridgeline. Having a repetitious effect along the strip (work.8)

Specific details of what is able to be included into the assessment of the depicted scenes are visual barriers of the streetscape such as foliage, and parked cars. It is this level of visual response that was explored, driving at a rich, evaluative approach to the methodology that validated the method over the orthogonal drawing practice, which has no means of establishing such reality based responses.

A challenge to the process was the mental juggling necessary in creating the object. The internal spatial requirements, levels and functions had to be considered in the formation of the external form.

The objects created allow a pragmatic appraisal also, climatic responses are able to be deduced from known orientation of the site and the deduced lighting/ solar information perceptible from viewed angles of likely shadow casting taken from the drawings. Concerns of wind are more challenging to assess.
5.7) PERSPECTIVE IN VISUAL PLANNING

Perspective is not generally considered a planning tool. A plan is exact in its alignment of visually disjunctive spaces. This is not an attributed quality of perspective. Where Villapando avoided the problem by reverting to the convention of the plan. In contrast, this project architecturalised the problem, celebrating the disjunctive process in the architectural result. To adhere to a design method of visually experienced representations based on perspectival drawing, a scope of tolerance was introduced to the project. Tolerance is allowed in the overlap or disjunction between the individually modeled rooms or spaces. (left). Celebration of the overlap and disjunction is visually expressed.

Tolerances exist in the current architectural and construction practices, the translation of construction drawings through to a built reality includes onsite modifications and adjustments, this frequent condition results in the need for ‘as built plans’ to document these discrepancies in the constructive translation. Planning in perspective has similar outcomes to the ‘as built plan’.

Modeled iterations of perspectively viewed spaces were constructed while each model was butted up version of the individual spaces butted up to the adjoined space, each was intended as an autonomous object. For more spatially complex areas, modeling became the primary design tool, the range of vantage points within models providing a visually flexible means of designing the interior environment. In this way the planning was still achieved visually.

Planning by means of the visual was dictated by predicted sight lines of the user. The intent was to use visual connections to sequentially navigate the user around the building; the designed spaces accommodated this aim. A multiplicity of views provided visual reference and validity to the process. The visual concerns shaped the spatial construct, meaning the layout of both the horizontal and vertical dimension were simultaneous considered in the ‘planning ‘of the building.

By eliminating the abstract convention of the plan, the spatial relationships gain a specific relationship to the user. Visual linkages provide an intended dialogue throughout the complex; a culminated richness of connections through void spaces creating visual apertures, roof design, floor heights, cut and fills of topography are selected examples of decisions reached and justified by visual concerns. Responsive to the experience through spaces.
Perspective and the Interior Environment.

5.8) Perspective and Loss of Context

A drawn, not measured, perspectival representation is realized by using contextually derived proportions and also relationships to the bodily. Exterior massing has the advantage of being relational to existing buildings. The internal can only be understood in direct comparison to the known scale of examples such as; drawn people, furnishings, joinery and access way heights. This produces a framework of scaling devices that provide impressions of height and depth according to the viewed reality. This type of context is limited to the internal scene, which excludes reference to the building as a whole. The designer and the critic both seek the relationship of the internal space to its context.

The drawing of the internal environment (as in work.10) raises the issue of fragmentation once again. The internal view often excludes the wider context of street, adjacent buildings and horizon line. As the context is taken away so as is the ability to spatially locate the depicted space. The drawing, dependant on the vantage point and overlap of referential visual information within the drawings, will usually lose cohesion toward the series of drawings. A series of drawings are intent on spatially describing the whole of the building, a space visually disjointed will become incomprehensible and require reference for it to be of use to the assessment of the scheme as a whole. The drawing requires a reference point to assist the critic in understanding the peripheral spatial relationships of the image and constructing their own mental model of the perceived space.

This project utilises the advantages of the physical model to overcome the limitation of visual reference for the internal drawings. The model becomes the referencing device to spatially locate drawn images to the wider context. This allows the strengths of both the model and the drawn image to be exploited. The model is the device of spatial entirety and the drawing allows the depth of spatial quality, materiality and detail that could not be deciphered on a physical model of reduced scale.
WHAT HAS BEEN DISCOVERED?

The trial into visually orientated methods of design process has uncovered both advantages and limitations that require critical evaluation. In many cases the complexities involved in designing mean a limitation in one respect can result in advantage to another. What is defined however, is the advantages and limitations related to; i) ability of methodology to aid visually and experientially responsive design, and ii) comparison to orthographic drawing as a means of architectural proposal or production.
6) **Summary**

‘A design process of visually experienced truths; limits, advantages and lies’.

Basis of argument:

The basic premise of the design as research has been to propose an architectural solution exclusively designed by methods that are representative of what the user will visually experience. Within this, a critique of the process and the methods of perspective drawing and physical, scale modeling occurs. The aim was to discover and respond to the limitations and advantages of designing in accordance with the conditions of the lived, visual reality, and to produce a more spatially and experientially rich result by means of the user orientated design method.

It was by critique of the perspectival methods limitations, and the design process that responded to these limitations, that the resulting documented and academically defensible methodology evolved. This methodology stayed theoretically tied to visual experience, providing an argument on the applicability of an exclusively perspective based design method. The outcome of the applied methodology has provided an argument that is alternative to current practicing architectural design processes that prioritise the dimension and the orthographic drawings which represent it.

The study was seen as a trial, intended to bring awareness of the effects of design methodology on an architectural outcome, highlighting the current blind spot toward architectural design processes. The blind spot is the *unquestioned* authority given to orthographic drawing, used for design, critique and communication purposes; in both realms of architectural profession and academia.

In searching for limitations and advantages, the intent of this architectural outcome had to be distinguished; either designed as a proposal or designed for production. The opposing attributes of the qualitative and the quantitative lead to differing perceptions of truth and lies. This design proposal is research that gives priority to, and assesses against, qualitative truths.

The limitations and advantages, according to this study can be broken into two parts. The first are aspects of visual methodology that act as a hindrance or that are advantageous to achieving a spatially responsive design proposal. Secondly it is the limitations and advantages that can be assessed in direct comparison to the standardised architectural design methodology of orthographic drawing.
6.1) LIMITATIONS OF METHODOLOGY TO AID VISUALLY RESPONSIVE DESIGN IN COMPARISON TO ORTOGRAPHIC REPRESENTATION

The methodological restriction adhered to in this research is the representation of visually realised experiences. A visually reality has inherent limitations imposed. To design by what is able to be seen limits the understanding of what cannot be seen.

The study has shown distinction of limitations involved between designing exterior and interior environments. A shift of methodology was forced by the difference between designing exteriors of objects within a given context and designing interior environments in visually closed contexts. It has been observed that the more visual information that is able to be included into a drawn frame, the greater ease is afforded to the reader in spatially locating the context of the image, a sliding scale of comprehension has been observed, where the more focused and visually contained a depicted scene, the less association and ability for spatial critique is made. This is true for the designer and the critic, unless the specificity that the focused frame brings is able to be referentially attached to a model displaying the wider context. The model is used for the designer and critic to mentally apply the depicted perspective scene to the referencing device (model).

Interior environments proved to be most problematic in communicating design intention due to the restricted visual scope. The perspectival method of design needed to allow for this limitation of a restricted visual field. A tolerance was introduced to compensate for the inability of perspective to accurately describe spatial planning. The need for tolerances of quantitative dimension in this process, where an abstract, orthographic process requires none, proves the comparative limitation of perspectival to quantifiably plan spatial environments. In response to this limitation, this tolerance is architecturally celebrated however, not disguised as a flaw, but visually expressed as part of the expression of process in the architectural outcome. This approach of tolerances is theoretically justifiable, keeping in line with current building practice as seen by the need for as built plans in realised constructions.
Visual barriers block vision and are what limits the wider contextual understanding of designed spaces. In doing so, limiting is the visual comprehension that is adversely affected by the vanishing points of perspective, these recede visual information and detail. The receding of visual information occurs also in the views created from modeling and perspective drawing. The effect of giving spatial validity to perpectivally designed spaces is reduced when the scale of the information has receded far back into a depicted scene. The comprehension of critics trying to assess the worth of information of a small scale leaves an opportunity for a fallibility of the method to deceive the designer and the critic. The convention of plan overcomes this restriction but is an experientially abstract representation with the ability to artificially penetrate surfaces, one argued to distort and detract from experientially considered architecture.

Multiplicity of drawn views is the only way to overcome the shrinking of information, bring key spaces to the forefront of representations, to design, understand and communicate their functional and experiential qualities.

A perceived limitation requiring a concluded clarification is the assessment of perpectival design as surface architecture. By seeing only what the user sees the architect is also at the same level as the user, and not in control of the entirety of the building design process. Conditions of structure and services are least able to be integrated into design decisions. As such, the process is limited to competition type proposals because of the visual, not systematic or structural based descriptions. Explorations into making the designed project communicative for construction purposes have not been trialed and have fallen outside the scope of this project. Yet the awareness of this does not directly label it as a specific limitation, for the scope of assessment is in fact the qualitative. It is the qualitative which is sought to be restored within the quantitative methods that are currently the standardised design method.
6.2) ADVANTAGES OF VISUALLY EXPERIENCED METHODOLOGY AIDING A VISUALLY RESPONSIVE DESIGN IN RELATION TO ORTHOGRAPHIC REPRESENTATION.

Overview:

A key advantage of visually representative methodology in aiding the proposition of a visually enriched design is the direct association that the designer has with the proposed user. Perspective drawings with eye lines and vanishing points taken from plausible heights promote a visual responsibility of the designer toward the user. It is the priority given to the proposed user as opposed to the conventions used by the designer that marks a crucial point in the advantage of the perspective method over the orthographic representations. Key words of acknowledge, responsiveness linkages and dialogue come out of previously documented appraisal of the perspectival methodology. The terms highlight the spatially attentive attributes the method has brought to the architectural outcome.

Response to visual detail:

The need for visual exploration of the entire complex in pictorial detail requires a thorough resolution of detailing throughout the perspectively depicted aspects of the project. Qualities of; material light quality, planting, and detailing that are visibly apparent culminates into a comprehensive understanding that the designer may obtain from the method used.

The close level of detail needed to be represented in pictorial perspectives such as those described in the previous paragraph could plausibly be left out of the design. Consideration of an architect working in abstracted views, where visual compositions that are informed by detailing are not able to be viewed and therefore explored in any depth by the designer.

Representation of materiality is necessary to produce perspective drawings in a realized pictorial fashion, a quality able to be omitted by the process of plan and section which are able to dismiss colour and textural quality with the convention of blackened section cuts.

Experiential:

Designed views as special moments created from the fixed view frames of perspectives are contemplated and considered compositions that take consideration of multiple visual factors that cannot be compacted into the information offered by single orthographic drawings. The experiential qualities designed and communicated are best expressed by a visually representative method due to the large number of factors that are involved in a spatial composition, many of which are qualitative and not quantitative.
Planning:

Spatial planning is responsive to views through apertures and visual linkages. In this way the planning is not dictated by measurement of floor plates but compensational to the architectural intention. The designer is more in control of the spatial effects, not the translation of information between the orthographic views from plan section and elevation. A combined and resolved view of the orthographic is already made available in the 3D version of the perspective drawing, to designer, critic or client. An architect is able to represent any building in both orthographic or more pictorial, perspectival methods. What is argued is that the planning by orthographic method is able to dictate decisions toward rectilinear alignment of walls and spaces, many of these decisions are *promoted* by the ease of which it is to draw in parallel lines irrespective, of the spatial outcome. The perspectival method is unable to attain the alignment of planned parallel spaces with ease and is argued then to have an altered focus. The spaces are aligned instead to the visual concerns of a more considered interest and specificity into the spaces activity rather than formal alignment.
6.3) Truths and Lies.

Truth and lies are fundamental issues in formulating an argument toward the validity of a visual experienced, representation method.

A significant part of the debate on the truth and validity of perspectival representations in the design process has been finding methods to validate the aspects of perspectival methods that are open to an arbitrary interpretation. Labeled as lies and deception, the non quantifiable aspects of the perspectival view, dimensionally unquantifiable and therefore not directly applicable to construction concerns, has been disregarded as a primary design tool in contemporary architectural practice and academia. The double referencing and testing of the design propositions that appear in perspectival drawings is sought to provide evidence of physical and functional plausibility. The result of this, is a methodology known to be inherent with arbitrary truths, not dimensionally measurable, but seeking a truth of spatial quality that is communicable to the viewer of the intended architectural result.

Lies, selective viewing angles and optical trickery within a singular autonomous vantage point can force a building to be deceiving to the viewer. By selection of views an attempt to deceive the viewer could be constructed. Truth can be sought in drawings and models being referential to each other, requiring a holistic consistency of representation. This is demanding of the designer, yet in line with the description of spatial quality, an artistic pursuit becomes involved. This means a method is not easily replicable but requires a believability of the hand and the designer that produced the given work, if, the validated process can provide evidence of authority by repetition of visual information in multiple mediums that offers a range of critique. To believe what is qualitative is to believe what is seen, which leads the argument of this topic full circle, to the title of the paper, seeing is believing.
7) **Conclusion**

The course of research has academically questioned and revealed flaws in fundamental assumptions of contemporary design processes. The research showed a theoretical basis focused on visual representations of reality, leading to a questioning of the authority of orthographic drawing. The theoretical standpoint and the critique that was trialed in the applied methodology, compared to an orthographically dominated design scheme has highlighted a gap in the current architectural production methods. The method itself has a visually expressed architectural outcome evident in the design.

A conclusive statement that summarises the research of this design process and methodology, is that the methodology developed over the course of the research has a valued merit, applicable to future architectural proposals. The methodology has potential of application to academic and scholarly exploration of architectural intent, in denial of the necessity of the plan, it shows a valid method and means of architectural design proposal, this research is just one avenue of design exploration to interrogate the condition of a user experience space.

The basic premise remains, to design using the visual experience of the world is a believable version of truth, and plausible avenue of architectural exploration.
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So, do you believe me?