This diagram represents an initial attempt to document the impact of the 'Field of Concerns on the practice and establish how it may be tracked against the 'operative' frames of reflective developers in the Constructing Families diagrams.
The ‘Field of Concerns’ orchestrated as a template for a spider diagram that seeks to ‘make visual’ the qualitative aspect of each project by Iredale Pedersen Hook.
Chapter 6
Mapping the Field of Concerns

Following the clear establishment of the ‘Field of Concerns’, the PhD research moved to document the nature of the shift away from ‘three-pole’ practice and sought to arrive at a systematic qualitative evaluation of the presence of the Concerns in each project. In turn, this analysis may inform the primary focus (and track a shift in focus for the practice) and the role of each partner in the projects (as assumed through a bias in the Concerns) to define the manner of authorship and ultimately ‘measure’ the success of each project in meeting the aspirations of the practice and the embodiment of its collective value structure.

Spider Diagrams
Through my experience in the protracted design and construction of the Innocent Bystander winery, I became aware of a technique in wine science that attempts to communicate the qualitative difference in wine – referred to as a ‘spider diagram’. Frowned upon by some wine purists for removing the ‘magic’ of wine creation, but embraced by winemakers as empowering their decision making, the spider diagram seeks to unpack wine tasting through analysis and production of a sensory profile. “The sensory profiles, represented as spider-web graphics, make the sensory characteristics of wine visible, and show how the wines look, smell, feel, and taste from the consumer’s perspective. If one spider-web is projected over another it will become unmistakably clear which characteristic differentiates one wine from another. Thus taste differences between the various wines can be delineated.”

The spider diagram (or ‘radar chart’) was perfected in the product-marketing domain to show relationships between products, and is used to compare the performance of different entities on a set of axes. Usually, a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point is provided. The spider diagram provides more dimensions and a description of the interaction between these dimensions that may not impact other dimension.

The idea that the qualitative characteristics of wine might be measured and communicated through the realm of connoisseurship rather than empirical science was seized as an opportunity and strategy to measure the architecture of iredale pedersen hook against the Field of Concerns. What follows is the assessment of five key case-study projects by the practice, covering a range of programs and sites, reflecting on the projects through the canon of the field of concerns, then providing a qualitative measure through a spider diagram for each project.

Footnotes
1 http://www.samresearch.com/122.html accessed 10.08.08.
2 ibid.
The Yarra Valley is an emerging wine region about an hour east of Melbourne. This new winery and cellar-door complex is located in the main street of Healesville, the region’s local centre. A strong formal gesture, the architecture evolves from a diagram that turns wine production into bands of program. Elevated as a long textured-concrete wall, the external face of the facility is both evocative and defensive. The concrete box locks into a timber-clad cellar door that, upon entry, seeks to reveal the complexity and alchemy of winemaking through a massive wall of glass that provides a section through the barrel store and processing facility.

Re-calibrating the Suburbs
The owners of Innocent Bystander wanted to emulate the Burgundy region of France by bringing the experience of winemaking to the town, incorporating it into the culture of the community rather than having it remain isolated on the vineyard. The winery sought to reveal the process of winemaking to visitors through engaging them with the physical experience and excitement of a working industrial facility.

The building consists of four major elements: the barrel store, a thermally controlled concrete volume; the processing area, a factory of fermenters and tanks where the wine is made; the hardstand, where fruit is received and sorted; and the cellar door, where the public interact with the facility and purchase food and wine. A large glass wall separates the production area from the public in the cellar door allowing a full view of all winemaking activity and exposing the complexity, hard work and delight of the process. Wine from Victoria has an international reputation. The pinot noir from the Mornington and Bellarine peninsulas is fantastic, the shiraz from Heathcote is spectacular and the chardonnay from the Yarra Valley exceptional, but the architecture associated with these great regions is rarely equal in quality to the wine. The investment in design at an urban, commercial and hospitality level at Innocent Bystander Winemakers demonstrates that the collaboration between architecture, wine and the community can produce a thriving business and help revitalise a town.

Means of Economy
Innocent Bystander is a cheap, elegant shed that contains a manufacturing process of precision and art facilitated by very expensive equipment. The desire of the architecture was to take straightforward, standard factory detailing and make it 1% more sophisticated. The overarching philosophy has been to create an architecture that is robust and industrial in both scale and material, but to give it an unexpected quality of refinement and elegance. Standard commercial construction has been used, but the detailing of conventional elements and assemblage of the parts has been carefully considered and developed. The client’s demands for an economical, functional space without fussiness have been met by an architectural and environmental agenda seeking to maximise the potential of ordinary materials. The strategy of refining existing construction techniques to create a commercial architecture that is both elegant and economic is rare in a contemporary context. The focus of the design intent has demonstrated that a sophisticated and functional space may be created through careful use of robust material.
Environmental Construct
The barrel store is constructed from insulated concrete ('Thermomass') walls and pre-cast concrete plank roofing, which – almost entirely through sheer thermal mass alone – maintains a constant temperature in the building for the storage of the wine. This allows mechanical air-conditioning to be minimised, greatly reducing the energy consumption and running costs of the manufacturing facility. From the exterior, the cellar door component is essentially a commercial glass box wrapped in recycled timber slats that serve to soften the toughness of the concrete. This provides reference to the timber of wine barrels and, most importantly, casts a filtered northern light into the interior, definitively shading the western façade. All rainwater is collected from the huge roof to be recycled as part of the winemaking process. Materials have been left in their natural state, galvanised or Colorbond-ed, with no paint finishes (other than interior plasterboard) in the entire building.

Referential Landscape
The main façade of the barrel store is articulated by the application of an image of the client's vineyard in the surface of the Thermomass concrete panels of the barrel store. It seeks to create the 'Morie Effect' of converging lines of vines when driving through the rolling vineyard landscape contrasted against shadows from newly planted trees. Connecting the town to its surrounding rural condition, this also reduces the impact of the large wall on the streetscape. The timber cladding on the cellar door provides a visual connection to the substantial forests that are immediately to the north of Healesville.

Social Sustainability
By seeking to remove the winemaking experience from the vineyard and place it in the town, the client, program and architecture sought to build a community around the production and tourism associated with food and wine. Employment, esteem and, most importantly, a social spirit are vital to regional Victoria and the winemaking industry is able to contribute significantly to these. The architecture of this project seeks to connect and extend the townscape of Healesville over a small bridge that has, until now, signalled the end of town. Urbanistically, this project has been seized as a design opportunity rather than treated as a constraint. Referencing the scale of the imposing façades of the Healesville Hotel and the Grand Hotel, the winery defines a strong formal gesture to the street, responding to and extending the dense streetscape of Healesville. The winery has also expanded the aspiration of the cellar door beyond wine tasting to include a cheese room, pizza oven, bakery and coffee roasting equipment. It has become, as one food critic stated, “a Bunnings [popular ‘big box’ hardware retailer] for foodies!” Providing a relaxed, accommodating space that evolves from the idea of a pub as a meeting place and offers the community a key point of connection to the industry.

Spider Diagram
Due to the budget and scale of the facility, and strong concern for a sustainable response to the project, the spider diagram is heavily weighted to the bottom three fields. Its lack of suburban context and social engagement doesn’t allow it to ‘score’ well in these concerns.
Entry to cellar door under existing tree

Winery and cellar door in street scape
Formative sketch (MH)

Cellar door interior

Entrance deck
Deflection in plan captures a manufactured space and gestures to a distant view.
Located amidst the rolling hills of Victoria’s ‘Spa Country’, the Sheep House is embedded firmly in the rich red earth. Appearing as a line across the landscape, the house is essentially a long, thin volume of accommodation opening to the north. A deflection in plan creates a sense of enclosure to the south defining an exterior ‘room’ of manufactured landscape captured from the paddock. A lawn circle and a gravel circle counteract the linearity of the building. As an object, the house seeks a solid relationship with its site. As a series of spaces, it opens out to the landscape but maintains definition. As a place to live, it is robust enough to accommodate total indulgence without concern.

Referential Landscape
The Sheep House adopts an alternative reading of the Australian landscape. Rather than ‘touching the ground lightly’ in the manner of Glenn Murcutt and the Sydney School, the architecture prefers to embed itself firmly in the rich red earth – becoming part of the land, as opposed to hovering above it.

The property is 100 acres of undulating pasture, adjacent to the Wombat State Forest. It is subdivided from a larger land holding, but shall remain as a small, working sheep farm. The paddocks that define the grazing areas have been reconfigured from rectangles into flattened-but-conjoined ovals, with grass inside and (what will eventually be) re-established forest outside the ovals. The curves scribed by the fence posts act as a horizontal counterpoint to the natural rise and fall of the land, playing games with perspective as one moves around the paddocks.

The position for the house was specified to take advantage of particularly magnificent views of distant hills across the state forest, and also to survey the farm from what is effectively the highest point on the site. However, the building was not intended as a landmark. Through further manipulation of the landscape, the entry track and approach to the building strategically dips and curves past existing and newly planted vegetation to incrementally conceal and reveal the house. This allows details of the architecture and its relationship to the topography to become apparent in a staged cinematic manner as the visitor moves closer.

Appearing at first as a line and then a wall across the landscape, the dwelling is seen first obliquely in the distance, then disappears behind foliage to emerge perpendicular to the access road. The road passes between the dwelling and the service module of carport and power container, entering a contained exterior space protected by the building. The house is essentially a long thin volume, locked down by two stone fireplaces, that kinks at the eastern end to orientate the occupants to the sunset. This deflection in plan also creates a sense of enclosure to the south, defining an exterior ‘room’ of manufactured landscape captured from the paddock. The room contains two formal circles; one of lawn to play upon, and one of gravel that terminates the access road and a stone terrace that engages the axiality of the house. These counteract the linearity of the building but also impose a stiff geometry on the landscape.
Environmental Construct
The south wall of the volume is constructed from thick, insulated pre-cast concrete panels that serve to reduce heat-loss on the dark side of the building, but also ground the length of the form. The house is entered via a timber ramp hung from the concrete wall. Along its length, the panels are perforated by openings that frame views back through the building to the north (where the visitor has just driven from). The form maintains a constant roof-line, as the spaces step down the slope from the east to form large volumes for the living spaces to the west and intimate spaces to the guest rooms at the far east. Inside spaces are logically assembled along a gallery on the inside face of the concrete wall, sending northern light to each room. The north wall is predominately glass with deep red bands of Jarrah timber-cladding on the exterior, which wrap down to form a deck that acts as a skirt to the building and references the idea of a ‘verandah’.

The dwelling also pursues a committed environmental agenda. Entirely ‘off-grid’, all power is generated from the solar panels that cover the roof of the carport. In-slab hydronic heating and open fireplaces provide necessary heating in very cold winters. Large sliding panels of glass (shaded by a vine-covered pergola) within the north wall allow significant cross-ventilation, eliminating the need for air-conditioning.

Means of Economy
The materiality of the house seeks to engage the richness of the landscape with dark chocolate-coloured concrete floors. The greying of the timber and tonal qualities seek to emulate the colours of the local stone used in the fireplaces and surrounding walls. There are no painted exterior surfaces and the exposed, predominately recycled, timber will be allowed to grey to its natural state.

As an object, the house seeks a solid relationship with its site. As a series of spaces, it opens out to the landscape but maintains definition. As a place to live, it is robust enough to accommodate total indulgence without concern.

Social Sustainability
The social sustainability aspect of the project is largely connected to the rehabilitation of the landscape. Extensive tree-planting has created a wildlife bridge reconnecting two components of the state forest that have been separated for almost 100 years. As part of the restoration, a dam has been cleared and foreign noxious weeds and brambles removed, encouraging a range of native wildlife to return to the site. The natural watercourse of the site has been reestablished and the access road remade so that water erosion no longer effects run-off.

Spider Diagram
The strong engagement with landscape and sustainable-but-robust materials, and the fact that the house is off grid, positions the project firmly in the lower half of the spider diagram.
The insulated concrete south facade

View across the landscape from the embedded living room
View across dining space

Gallery along interior of concrete

Living room sketch (MH)
Substantial glazing to north facade as bulldog form hovers over the deck.
Reynolds Residence
This small residential project explores the uniquely Australian architectural typology of the ‘backyard renovation’. Grafted onto the rear of a 1930s brick bungalow, this design reinterprets the local architectural tradition of the addition. Stretching over the site, the new space deflects in plan and section towards the northern sun. The ‘bullnose’ roof form of the addition culminates and wraps back, hovering above the floor level and capturing a new volume that opens up to the garden. This dynamic spatial quality contrasts the stiffness of the original dwelling; a constructed duality of expression or, as Adrian Iredale refers to it in his Masters thesis, “the suburban Jekyll and Hyde”.

Re-calibrating the Suburbs
The architecture of this addition exploits two traditional concepts of domestic architecture in the Perth suburbs: the ‘lean-to’ and the ‘bullnose verandah’. The ‘lean-to’ is, effectively, an addition of rooms to the rear of a substantial dwelling—that is, they lean against the existing dwelling. Traditionally lightweight or even temporary in their materiality, the lean-to contained a kitchen or bathroom and perhaps an informal living space or sunroom. The ‘bullnose verandah’ is a traditional roof form, usually detached from the main roof that covers a wide external space at the front (as an extension of the porch) or back of the house. The term ‘bullnose’ refers to a corrugated metal sheet that has been curved to give the utilitarian metal both strength and character. The Reynolds house stretches the ‘Lean-to’ addition to become a substantial new living/dining space with kitchen and bathroom, while the old house is utilised as bedrooms. Orientating the new spaces to capture northern light across a new wide verandah, the addition eventually ‘leans back’ and finishes in the form of an exaggerated ‘Bullnose’. Unlike the traditional verandah, this is more than just an aesthetic or formal device. Here, the metal sheet is curved back under itself and appears to float above the floor level and deck to offer a platform inside and an external seat—a romantic gesture that we believe typifies Perth and the lifestyles of its inhabitants. So the old house is re-appropriated and the new addition re-orientates the life of the dwelling towards open space engaged with the garden, but achieves this by using traditional suburban forms.

Referential Landscape
The addition to the Reynolds Residence is not a simple repeat of the original house. Instead, it forms an interpretation of the suburban context in terms of both built-form and landscape. It understands the organisation of the existing spaces (internal and external) and utilises them strategically to focus on the qualities of the new spaces. Externally, the new dwelling responds to the level of detail and craft that are apparent in the original house with particular attention to the window fenestration and use of material. The sand-finished rendered podium of the addition has been introduced to connect to the limestone podium of the original house both visually and physically. The white sand-finished render on the south-facing wall of the addition continues the collage of materials present in the original house and the lapped, recycled Jarrah panelling that connects the transition point of old and new and continues the tradition of the lapped Jarrah fences in the area.

From the beginning, this project attempted to integrate landscape and architecture. The addition follows the long axis of the site to orientate north and maximise the possibility of connecting spaces back to landscape. Openings were placed
to focus interior spaces on existing trees (both on the site of the house and of the neighbours’ house) and the re-vegetation of the land with native species. We designed the landscaping as integral to the garden from the first sketches; this is now being implemented and will eventually create a sense of native bush within South Perth, concealing boundary fences with the colour and aromas of native Perth plant species. This new garden draws on the existing to provide the necessary privacy for the extended dwelling, concealing it from nearby apartment buildings and other houses.

**Means of Economy**

Low cost and local industry standard materials were incorporated throughout the house. Innovation occurs within the parameters both of what is available and economical and what is possible for local contractors. We embraced local standard detailing, such as cavity brickwork and handmade steel windows, and looked to exploit the methods currently used in the formal ambition of the project. To minimise cost, the structure was very pragmatic and entirely within the ‘normal’ parameters of a Perth contractor’s expectations. Materials were selected on both contextual and ecological grounds, and on their suitability to perform the desired outcome. The geometries incorporated are clear geometric forms, easy to set out – a curve between two straight walls – but ultimately, when arranged together, they become architecturally complex. Recycled Jarrah cladding and CCA (‘treated’) pine decking have been used as suitably ecological solutions, but also as economical materials. Standard detailing has been employed. Cabinets and benchtops are generally laminates or paint finished to local industry standards, with the kitchen benchtop (as an extravagant moment) being constructed from stainless steel with integral sinks. Here, the initial cost is offset by longterm durability.

**Environmental Construct**

The house was specifically orientated north and the roof overhang was extended to allow the winter sun to penetrate deep into the house, and, through simple passive solar techniques, to keep the summer sun off the glass. The roof overhang extends out, in proportion to the increasing height of the glass, providing a formal dynamic driven by a pragmatic constraint. Spaces have been organised for solar gain and cross-ventilation, reducing the requirement for artificial heating, cooling and lighting. In particular, the rear masonry wall acts as thermal mass to collect winter sun, but also shifts and curves to capture the cooling south-westerly winds and to orientate the kitchen back to the living space and garden. Insulation has been specified beyond Australian Standards and the dwelling now collects its own rainwater. In terms of sustainable material use, the north-facing wall is clad with lapped recycled-Jarrah planks that were old, unwanted floor-joists from the previous ‘lean-to’; old nail and bolt holes belie the material’s former use.

**Social Sustainability**

This is a house for now and for 30 years’ time. The maintenance of the old house at the front of the block, apart from pure economics, provides continuity to the streetscape and the suburb. The ability to again inhabit the land with a new family and create a new dwelling that responds to the demands of a contemporary lifestyle defines a clear strategy to regeneration of the inner suburbs of Perth. The dwelling shall get better with age; materials have been selected on the basis of the effect of their transformation and, like the landscaping associated with
Formative sketch (AI)

Interior across new space to street and borrowed landscape
this house, will mature and gain quality over time. The white rendered walls will darken and stain and eventually merge in appearance with the sand-finished rendered podium; the Jarrah timber cladding will soften in colour and turn a silky grey; the Zincalume will mellow and lose its sparkle. All this will happen as the native landscaping continues to grow, increasing in scale, and, through its presence, defining the dwelling’s contribution to its context.

**Spider Diagram**
This project’s strong commitment to its suburban context and its solid resolution of its construction and materiality weights the spider diagram heavily to the right. Its private, inclusive nature means it cannot clearly fulfill a social agenda.
Orang-utan nesting boxes and shade structures
Perth Zoo Orangutan Enclosure

This project forms part of the practice’s ongoing work for the Perth Zoo. Designed to establish connections between Orangutan behaviour, living patterns and the qualities of their natural environment, this new enclosure consists of a series of ‘trees’ that simulate the physical complexities of a rainforest. The ‘trees’ are achieved through a careful assemblage of recycled concrete pylons and robust steel ‘branches’ and climbing frames. Each tree holds double-decker nests with timber and steel shading structures providing points of rest. Along with a collection of activities – puzzle boxes, dip tubes, water canons and drinkers – the bent-steel armatures and ropes are able to be tuned to create a constantly changing, stimulating event-space.

Re-calibrating the Suburbs

Again, whilst the orangutan enclosure is not strictly ‘suburban’, the proposition of re-using an existing facility and upgrading for new patterns of use and a contemporary lifestyle is critical to the intent of the project. In this case, the aim of the project was to upgrade and renovate a 30-year-old exhibit; to make it more appealing to the visiting public and increase the richness of the arboreal opportunities available to the orangutans. iph prepared a master plan to redevelop the exhibit through a series of staged projects to account for funding cycles, to prototype the individual new habitat areas (and subject them to rigorous live testing), and to minimise stress on the orangutan colony.

The new master plan replaces all existing ground-level viewing with new rooftop viewing – upgrading the visitor experience in line with contemporary zoo theory and maximising use of the ‘immersion effect’; placing the visitors among the renovated exhibits with the rainforest as a backdrop. Stage 1 was to install a new prototype exhibit; two new dens and an animal access-slide system to the dens.

Environmental Construct

Referential Landscape

The new exhibit seeks to provide an environment that facilitates natural behaviour, rather than the simulation of a natural environment. The prototype exhibit consists of abstract steel, concrete and a rope climbing-apparatus. Naturalistic exhibit furniture was beyond the scope of the budget, and living trees would be quickly destroyed by the orangutans. The key elements are nesting poles, adjustable mast trees, a ‘rope highway’, and puzzle boxes and dip-tubes. Developed in close consultation with the keepers and following particular animal husbandry techniques, each piece of exhibit furniture was designed to facilitate the demonstration of the animals’ arboreal habits to visitors, while providing a flexible (‘tunable’), stimulating environment for the orangutans.

The use of steel and recycled-concrete power poles meant that the exhibit components could sway and move in a similar way that trees in a forest would move. In moderate-to-high wind speeds, the nesting poles can be seen moving gently in the wind, and the smaller ‘mast trees’ spring back when the animals swing from branch-pole to rope.

Nesting poles are 12 metre-high recycled-concrete poles supporting steel-tube nesting platforms (three per pole). These are supplemented by shade structures, aerial drinking points and stainless steel dip-tube feeders dispensing jam and cordial. The tallest nesting pole supports a Ficus Rubiginosa in a tall steel pot that provides an element of ‘real’ vegetation, but this
has to be protected from the orangutans by a hot-wire barrier. A water cannon adds an element of delight and additional interaction, allowing the orangutans to spray each other (and possibly the visitors) with water. An additional external nesting pole is provided with a large steel cone below a nesting platform to prevent the animals from climbing down the pole. The pole has a bucket hoist allowing the keepers to introduce food to the orangutans from the ground. This pole is designed to allow the existing exhibit spaces to be extended beyond the existing moats and into the adjacent ‘Asian rainforest’ themed part of the zoo.

The Adjustable ‘mast trees’ consist of bent steel poles with ‘branch-poles’ that can be adjusted simply by the keepers to best suit animals of different sizes. They also provide a different route or experience for the primates. The dip-tubes and puzzle boxes provide behavioural enrichment and encourage the orangutans to build tools to obtain food in these apparatus. The rope highway’s ropes connect the nesting poles together, ensuring that each nest has multiple points of escape, and that arboreal opportunities are maximised.

Means of Economy
The budget for all zoo exhibits is limited and under constant review, so a highly economical and inventive solution was required (in terms of construction, but also in terms of acquisition of components and ongoing maintenance). The concrete poles for the nesting boxes were recycled power poles donated by the state electricity authority, providing an excellent robust and durable base for the exhibit equipment. The nesting boxes and shade structures were manufactured from new and recycled galvanised steel tubes, with attention paid to the detailing of the welds and triple-lock bolts to ensure the fixings were ‘orangutan proof’. The boxes and shading devices were then clad in recycled Jarrah boards, with the intention that the timber grey over time to blend with the galvanising. The mast trees are also galvanised steel pipe with unsophisticated connection details based in part of the scaffolding technology. The interior lining of the exhibit is green and red Colorbond corrugated steel sheets. These give a low-maintenance, but colour-rich, backdrop to the verticality of the nesting poles and armatures.

Social Sustainability
Of course, the agenda of the contemporary zoo extends far beyond the idea of the traditional notion of ‘going to see the animals’. It is now a site for the observation of behavioral patterns and a support structure for research and, among many other things, breeding programs to offset the elimination of species through the destruction of natural habitats. There is a constant battle between the revenue that may be raised by the reduction of the zoo to an ‘animal theme park’ and the ability of exhibits to provide a solid infrastructure for research activity. We hope that through engaging and interesting architecture the zoo facility will bridge the nexus between being a suitable environment for the orangutans and a spectacle that will encourage visitors to return.

Spider Diagram
This project has an over-arching commitment to the maintenance of a species and its environment. The very constrained budget positions the project on the lower part of the diagram.
Exhibit with the zoo landscape in background.

Detail of concrete poles and structural connections.
The rope highway connecting nesting platforms

Orang-utan with a dip tube puzzle

Complexity of overlaid formal language
The roof form opens to allow winds into the building and gesture inclusion.
Djugerari

iph was chosen by the Djugerari community to design an office, training centre and staff house for Walmajarri Inc., an Aboriginal corporation representing a group of Walmajarri people, whose country is located in the Great Sandy Desert. The building is a simple cluster of pavilions under a large parasol roof that initially appears informally placed. However, as one moves between the pavilions and through covered exterior spaces, specific views are framed and moments in the dramatic landscape are revealed. The remote location necessitated a simple language of durable materials and direct detailing. It is within the careful assemblage of these simple components that the architecture emerges.

Social Sustainability

When Australia was colonized in 1788 there were some 350 individual Aboriginal nations, each with unique languages and cultures. Today there are less than 200 languages still spoken and all but 20 of these are regarded as endangered. Walmajarri is one of these endangered language groups. The Walmajarri people are a nation of Indigenous Australians who have survived colonisation and governmental neglect over the past 80 years. In the 1950s, and within only one generation, the Walmajarri desert-dwellers left their homeland behind to face station life and a world beyond the sandhills. The last Walmajarri family who lived a traditional nomadic life left the desert in the early 1980s, and the last massacre by police occurred in the late 1930s, with several survivors still alive today. The families are faced with almost third world conditions: unemployment, poverty, health and social problems and, most critically, the question of how their children will negotiate the divide between the modern world and traditional culture.

In this extreme context, iph designed an office, training centre (with separate areas for men and women), and a staff house for a group of Walmajarri people at Djugerari Community (population 80), some 600 km due east of the Western Australian tourist and pearling town of Broome and 2225 km from the Western Australian capital of Perth. Significant consultation and collaboration with the community was necessary in order to engage directly with the incredibly complex cultural issues that were present, and in order that the architecture respond to those concerns while being resilient to the equally extreme environment. Finn Pedersen’s Masters thesis, ‘Remotely Sustainable’, covers these aspects of this project and other remote projects produced by the practice in great detail.

Re-calibrating the Suburbs

Whilst not directly engaging in a suburban context, this project looks towards existing use and existing patterns of living in the community and seeks to extend and reframe those patterns in the new community centre and associated new ‘staff house’ dwelling.

Referential Landscape

Djugerari Community is the beachhead of Walmajarri country. It is the point where the Jilji, the parallel sandhills of the desert meet the ancient sandstone ranges and mesas that separate the river valley from the desert. It is here that the Walmajarri people could gaze from their own homelands to the lands of the north and the new, strange settlers with their cows, horses and guns. The Community Centre building is formed by a cluster of pavilions strategically located to use the ‘wings’ of the building and the overhang of the roof to capture specific
views south into this valley and out to Walmajarri country. The architecture acts as a device that frames, conceals and reveals the dramatic landscape with the composition of the pavilions determined by the location of isolated mesas, pyramid hills and sacred sites in the distance, including a massacre site. Each of these views has an important cultural heritage or ‘Dreamtime’ story, and, in this way, the building itself becomes a kind of teaching tool that reveals Walmajarri stories to its visitors. Wall panels from cement sheet that frame these views are available (and encouraged) for murals depicting the coded stories of their local painting style.

Means of Economy
It is extremely expensive to build in these remote locations. To this end, the detailing of the construction systems were simple and the range of materials was kept to a minimum and carefully selected to minimise ongoing maintenance costs. Due to its remote location, the facility was designed using transportable modules with pre-fabricated roof elements. These were conceived as an arrangement of insulated pavilions sited on a concrete platform and sheltered with a parasol roof, with specific outdoor spaces that would economically extend the interior spaces. A simple portal frame construction is used to create the parasol roofs, while the pavilions are conventional steel-stud framing, clad with corrugated steel and fibre cement sheet.

Environmental Construct
The facility has a sensible level of ESD considerations, appropriate for a remote Aboriginal community. Complex or high-maintenance systems need to be avoided under these conditions, due to the remoteness of the location and a lack of available skilled labour. The climate is extreme; summer temperatures reach 48 degrees Celsius and may only drop to 28 degrees Celsius at night, while in winter temperatures can range from below-zero to 35 degrees Celsius. Winter brings cold dust-storms and ‘willie-willies’, and tropical wet-season rains can drench the hills every few years. Each wet season, the Fitzroy River and Christmas Creek flood and cut the community off from road access. The community currently generates its power by diesel generators.

The parasol roof provides many shaded outdoor activity areas and shades the enclosed rooms, dramatically reducing heat loads. Inverter type air-conditioner systems are used to allow for year-round use of the facility. These have been modified to have high minimum thermostat settings and run-down timers that shut the units off after six hours. This minimises the power consumption of the units. The pavilions are light-weight steel frame constructions with mineral wool insulation to the walls and sub-roof. The parasol roof’s eaves and windows allow for winter sun penetration on cold mornings and provide a large shadow, lowering the heat-load on the platform and pavilions. Doors and windows are sealed against dust penetration. All light fittings are low-energy type and the hot-water systems are jacketed solar with a single ‘hot-shot’ booster-switch that shuts off automatically once the water has been heated. The exhaust fans and electric stoves are connected to run-down timers that shut off automatically after 1.5 hours before they need to be re-activated. The community has a good water supply taken from an artesian bore.
Generous space, robust interior materials and simple fans create a good environment for learning.

The building emerges as a direct response to the horizontality of the desert.
The community centre and staff house sit at the 'head' of the community.

Spider Diagrams
The diagram is obviously weighted heavily towards social sustainability and referential landscape. The remote location defines a necessary economy in construction and strong environmental consideration.
The composite overlay of spider diagrams from nine iph projects presents an intriguing study. Whilst the complexity of the work is obviously present the main observation that may be drawn from the composite is that whilst the practice has aspirations to a greater engagement with Social Sustainability and the idea of making a responsible contribution to the community, the diagrams suggest the core of the practice remains in the bottom part of the diagram towards the Concerns that focus on construction and landscape.
Chapter 7  
Towards Total Practice

Identifying Values
The process of identifying and refining the values of each individual behind the work of iph provides a clear foundation from which the work may proceed. The systematic unpacking of the projects through the Constructing Families chart, the New Trends Agenda and the Field of Concerns define ideas that craft a relationship – both within the personal evolution of the individual and across the collective practice. It is possible, as a result of this research, to define a point in the life of the practice and construct a comparative study across the formal generation, spatial conception and material realisation of the projects up to that point, including those begun or completed during the research period (2004 to 2008). The identification of the Field of Concerns as a summary of collective agendas, and the associated retrospective spider-mapping of key projects, has enabled the architecture to be assessed in a qualitative manner; that is, iph’s evolution and commitment to these shared concerns can be illustrated through qualitative diagrams. Subsequent testing of current projects against the Field of Concerns reveals the qualitative methodology has value in application and in resolving a proposition prior to the completion of the design stage of a project. The practice is now able to use the Field of Concerns as an element in the design process to stress or increase the impact of a particular Concern that may not otherwise be sufficiently represented.

The composite overlay of spider diagrams from nine iph projects (opposite) presents an intriguing study. Whilst the complexity of the work is obviously present, the main observation that may be drawn from the composite is that, whilst the practice has aspirations to a greater engagement with social sustainability and the idea of making a responsible contribution to the community, the diagrams suggest the core of the practice remains in Concerns that focus on construction and landscape (the bottom part of the spider diagrams). Arguably, this is entirely a result of the emergence of iph in the architectural landscape of Perth in direct lineage of a culture built on the innovative use of simple materials (as described in Chapter 4) in a remote city. It would seem that iredale pedersen hook will have to consciously pursue work that addresses their aspiration to move beyond well-detailed architecture to an architecture that makes a significant contribution to society, and I would suggest this is only possible if the individuals continue to develop their ability to collaborate together.

Infection and Cross-Pollination
As Iredale alludes to in the Houses interview, the manner in which the formal qualities and spatial constructs continue to move fluidly across projects that should ‘belong’ to the individual partners is increasingly surprising. This confirms the shift of iredale pedersen hook beyond its origins as a practice built around a three-pole position. iph now operates more fluidly as a collective with a shared vision and common goal to match its consistent value system. But, importantly, this does not mean that the practice shall become static or lose its fluidly and eclectic manner of operation. In a review at GRC07, critic Tom Kovac suggested iph could practice in the manner of ‘Total Football’ – the strategy of teamwork developed and perfected by Dutch football team Ajax in the early 1970s. This coaching strategy devised by Jack Reynolds, followed by Rinus
Michels, removed set positions. “Each player was undefined in
the manner that if a player left their position to attack, their
role could be adopted by any player on the field. In effect,
each player was allowed to play to their individual strength,
rather than seek compliance to a diagram or prescribed series
of moves. A player could simultaneously be attacker, midfield
or defender.”

This strategy led to an incredibly fluid, surprisingly un-chaotic
game that was both very entertaining and devastatingly
productive. As a consequence, Ajax dominated European
football for five years. Space and the creation of it were central
to the concept of Total Football. Ajax defender Barry Hulshoff
explained how the team that won the European Cup in 1971,
1972 and 1973 worked it to their advantage: “We discussed
space the whole time. Johan Cruyff always talked about where
people should run and where they should stand, and when they
should not move.”

The constant switching of positions that became known as
Total Football only came about through this spatial awareness.
“It was about making space, coming into space, and organising
space-like architecture on the football pitch,” said Hulshoff. The
system developed organically and collaboratively: it was not
down to coach Rinus Michels, his successor Stefan Kovacs or
Cruyff alone. Cruyff summed up his (Total Football) philosophy:
“Simple football is the most beautiful. But playing simple football
is the hardest thing.”

Having applied this analogy to iredale pedersen hook, the
practice, rather than consisting of three individuals with clearly
defined roles (poet, socio-environmentalist and pragmatist),
could consist of three individuals comfortable enough to slip
into whichever role is required by the situation or particular
constraints of a project. Critically, each is aware of the ability
of the others to adjust to situations and draw upon their
expertise to fulfill the particular Field of Concerns in a
collective of true equality. The exciting potential of this fluidity
could lead to a devastating game, an entertaining working life
and some superb architecture.

Footnotes
1 David Winner in Brilliant Orange The Neurotic Genius of Dutch Football
p84
2 Wikipedia gives a surprisingly good summation of total football;
accessed 14.08.08
3 ibid.
Cottesloe Surf Life Saving Club

Djugerari - Walmajarri Community Centre

Perth Zoo Orang - Utan Enclosure

Reynolds Residence

World War One and Two Memorial

Think Brick Competition
ESD Feature:
Included: Passive solar, natural ventilation and night cooling.
"Parasol" vented roof system, high efficiency draft seals and insulation.
Low embodied energy materials, low VOC, minimisation of PVC, recycled or FSC certified timbers.
Natural lighting.
Flexible design- plan for expansion.
Optional- Additional Funds required.
Ground cooling via underslab and in-wall air ducts.
Higher levels of energy efficient glazing and window treatments.
Building management system.
Dry toilets, grey water treatment, rainwater collection and re-distribution.
Photo-voltaic- grid connected, and/or wind generator.
The application of the Field of Concerns across current work allows an intriguing assessment of the ‘quality’ of each project and any traces of hybridity. As an exercise, the Field of Concerns is applied across four recent competition entries. The first three – a new club room for Cottesloe Surf Life Saving Club on the beach in Perth, an Indigenous Interpretive Centre as part of a lakeside residential development in the Perth suburb of Armadale and a national competition for a memorial to World War 1 and World War 2 – were competitions produced under the specific direction of one partner (Iredale, Pedersen and myself respectively), due to the other partners being overseas or on holiday. The fourth competition, Think Brick, a competition by invitation for the National Brick Association, was completed in a truly collaborative manner with active discussion between all partners and drawings and models being produced across both the Perth and Melbourne offices.

The Field of Concerns spider diagrams of each project reveal a remarkable discrepancy between the ‘successes’ of each scheme. In particular, the WW1 and WW2 memorial shows little regard to the underlying practice agendas, having been produced in Melbourne in near isolation. It takes a very hard-edged approach, imposing a stiff geometry on the site in response to the axial plan of Canberra. It is a blunt proposal lacking in finesse and, consequently, its spider diagram is limited to the centre. The other two projects, CSLSC and Armadale Interpretive Centre, reflect the varying degrees of collaboration from each partner and score reasonably well on their respective spider diagrams, though each lacks the required level of sophistication for them to be deemed successful. The CSLSC project seems to miss the point of the relationship of the architecture to the beach. While the plan is compelling, lack of resolution in sections means the final imagery and project presents a formal language that is monolithic and imposing. The plan diagram for the Armadale competition project is strong, but the resulting plan is undeveloped and the built form of the project lacks clarity and integrity. It fails to adequately respond to the lake or engage the idea of the indigenous community living in a contemporary culture derived from the suburbs in parallel with an ancient connection to the land.

Think Brick, however, produces a perfect response as a spider diagram and addresses all aspects of the practice values. It started with a very strong socially grounded idea that was developed from conversations between all three partners. I then developed the plan in Melbourne, while Iredale continued to diagram the idea in drawings and a model in Perth and Pedersen got involved with the section and the thermal and water-collection systems. Iredale and Pedersen then developed the brick stacking system with a manufacturer in Perth, while Melbourne continued to work on the plan and produced the renders and architectural visualisation. The result was a fluid pan-continental exercise, involving multiple members of the practice under the collaborative direction of all partners. Unsurprisingly, the project was highly commended in the competition and has subsequently provided a raft of material for future projects and explorations by the practice, both in use of brick and in the future consideration of the suburbs.
Armadale Interpretive Centre

Our proposal for the ARA Aboriginal Interpretative Centre intends to create a special place that will attract the whole of the community, welcome international visitors to the lake and introduce people of all backgrounds to Indigenous culture.

The Six Noongar Seasons – an Interpretive Trail
The centre is a series of connected activity areas that provide a range of unique experiences for visitors to the lake. Linked by an interpretive trail based on the six Noongar seasons, the spaces lead visitors from the carpark, to the beach, to the bushwalk and through the building guided by a metaphorical journey that describes a celebration of water and brings people together through fire and food. The journey engages with the diversity of the specific local environment, reintroducing threatened local species back to the site and respectfully preserving and enhancing the place as it exists.

A Space to Connect Earth, Trees and Sky
The interpretive experience is focused on the ‘building’ of a low-but-expansive structure that seeks to communicate the distinctive qualities of the site to visitors; that is, the body of the earth and the canopy of the trees. The concrete south wall swells from the ground, grows and curves to embrace visitors. Its dense granite surface captures the materiality of the adjacent Darling Scarp and, inside, the wall forms a gallery to hold artifacts and memories of the land. A central wall defines the multi-purpose space from the gallery. Made of rammed earth, this element continues to connect the architecture to the land.

Predominately made of timber, the roof of the space floats over the walls and is shaped to evoke the feeling of being under the canopy of a large tree. The high roof, over the multi-purpose space, is supported by a simple frame with highlighted windows and openings for good ventilation. The lower roof, over the gallery and retail entry, creates a more intimate space for the study of artifacts. A verandah to the north and over the entry space creates shelter and articulates the simple timber façade.

Spider Diagram
ARA has a high level of social engagement (though perhaps of the wrong type), but remains unresolved as a building.
ESD Feature:

Included: Passive solar, natural ventilation and night cooling.

"Parasol" vented roof system, high efficiency draft seals and insulation.

Low embodied energy materials, low VOC, minimisation of PVC, recycled or FSC certified timbers.

Natural lighting.

Flexible design- plan for expansion.

Optional- Additional Funds required.

Ground cooling via underslab and in-wall air ducts.

Higher levels of energy efficient glazing and window treatments.

Building management system.

Dry toilets, grey water treatment, rainwater collection and re-distribution.

Photo-voltaic- grid connected, and/or wind generator.

Space Utilisation Material Quality Orientation

Building Entry View

Miralles

Shade Structure at Archery Park

ARM

Shrine of Rememberance

South East View
**Armadaile Interpretive Centre**

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**Spider Diagram**
ARA has a high level of social engagement (though perhaps of the wrong type), but remains unresolved as a building.
lest we forget
World War 1 and World War 2 Memorial, Canberra

The Presence of Memory

Our proposal for a memorial resists the idea that collective memory of a tragic event can be embodied in an object. We seek to provide a place that connects individuals through shared experience. The memorial is essentially three spaces – the ‘trench’, the ‘water drum’ and the ‘plane’ – connected by a regimented ‘parade ground’. Each space evokes an aspect of the conflicts; the war on land, on sea and in the air. The shared spatial experience allows those that lived through the wars to remember and those who love them to begin to understand their experiences.

The trench is a large circular form cut into the ground to allow the visitor to descend into the earth along a steady ramp. The walls of the ramp are made from ‘off form’ concrete that refers to the ‘duckboards’ that lined the trenches at war. At the base of the ramp is a seat recessed into the wall, allowing for personal contemplation and storytelling.

The water drum seeks to provide the experience of the war at sea – not just that of those enlisted in the Navy, but also of Australians who sat on a ship for months sailing to Europe or Asia to fight. It is a circular drum with a glass wall with water running down over its surface. Visitors can walk around the exterior feeling the coolness and movement of the water. The glass is etched with the names of servicemen lost at sea. To touch them, you must place your hand in the water. A centrally located stone plinth allows quiet consideration of the sky, which is framed by the curved top edge of the glass wall.

The plane is primarily a strong, vertical element intended to communicate the scale of the war in the air. A series of aluminium blades reference the precision of flight. We are most interested in the way that the shadow cast by the form will describe the ephemeral experience of the war in the air. During the day, the shadow of the plane moves over the Memorial, providing the security of support from the sky. On Anzac Day the profiled peak of the plane aligns to create the perfect shadow of an Avro Lancaster on the parade ground.

Spider Diagram

World War 1 and World War 2 Memorial is a striking scheme, but fails to engage directly with the concerns of the practice due to its lack of development.
Think Brick
Boom Town and the Forgotten Suburb

Perth is still booming. Last year its economic growth was greater than that of China. This project explores the forgotten middle suburbs of Perth. Poorly served by public amenity and public transport, these form the middle of middle Australia. It is in this context that we identify the primary issue of housing affordability, but also the changing demographics of Australian families. The four-bedroom, two-bathroom suburban ‘dream home’ is no longer an appropriate design. A recent state government paper suggested that WA’s population will rise by 2.5 million people by 2026. At this rate, its population growth rate is almost double that of the rate of housing construction. Fundamentally, the population is getting older and the number of children being born is declining rapidly. Ironically, WA is building larger homes with more bedrooms to house fewer people. The Think Brick project also seeks to establish more effective land-use principles. A typical middle suburb lot size has been selected (25 m x 40 m, or 1000 m²). We suggest that two residences should replace the out-of-date project home that currently occupies the land.

The primary concern for the new construction is its potential for re-use when the building is no longer required. A cavity wall interlocking brick system has been developed in association with Midland Brick, where the hollow core of the brick is dropped over a series of recycled plastic reinforcement rods. As no mortar is used, the masonry units shall be able to be reused. A recycled plastic brick-tie shall be developed to provide additional lateral stability. The top of each cavity wall wall shall be capped with a pre-cast concrete ring-beam that forms a gutter to collect rainwater and serves as a pitching point for the recycled timber roof structure. The colour of the brick walls shall be determined by the manner in which they attract winter or summer heat gain. Strategically located dark-coloured bricks shall collect additional heat-load from skylights that will capture winter sun in south-facing rooms. This idea is transferred onto the brick tile flooring system, where darker coloured tiles shall be used to collect additional heat from the winter sun that is allowed to penetrate the space. The roof is clad with fired clay tiles of a smooth surface to allow potable water collection. Beneath the tiles is R3.0 foil, and batts fixed to a painted screw-fixed plywood ceiling. A bank of PV solar cells shall be located on the north-facing roof on the main living spaces, providing enough area to collect 2 Kw of power.

Spider Diagram
Due to the focused involvement of each partner and the office as a whole, Think Brick scores exceptionally well on the spider diagram.
**Evidence of Hybridisation**

The increasing hybridity and infection of each partner across the work is an intriguing study in typology, materiality and spatial awareness. It is possible to track the evolution of an idea across the evolution of the practice and across the hybridisation of the practice through projects under the direction of a different partner in a different state. In doing so the nature of the research shifts to the testing of an architectural idea or strategy that moves across typology, program, site, environment and budget. Authorship is challenged and the assessment of effectiveness can be recorded and understood.

**Case Study Projects (partner in brackets)**

**Top**

The emergence of the similarity in plan form at Wilner(i) > Cheese House(i) > and then Kinky(h). The dynamics of the plan form seek to provide an inclusive engagement with north, but desire to create an internalised exterior space with direct relationship to the interior.

**Bottom**

These projects track the development of the Platform, Boxes, and Parasol Roof where the fluid ground surface (Platform) receives a collection of stand-alone interlocking objects (Boxes), all gathered under an overarching roof (Parasol). BBO (ip) > Duger (i) > GAWA (ip) > Meares (i)
Extended linear form with degrees of inclination to respond to views, orientate towards north and creation of a suggested encapsulation of field of space in the landscape.

Sheep (h) > Gidge (i) > Dolly (h)

Demonstrates the development of the Parasol Roof and its subsequent thinning and thickening as experimentation continues and occupancy feedback is processed.

Derby (p) > Tuntjuntarra (p) > Dugeri (p) > Western Des (ip)
Chapter 8
The Act of Reflective Practice

Consequence
The ability to assess an outcome of architectural practice as an individual practitioner is straightforward in a qualitative and quantitative manner: does the outcome achieve the prescribed design intent? Did it make budget? Is the client happy? In a collaborative process, as part of a practice of three individuals, the assessment of the success of an outcome is exponentially more complex. Certainly, the process of architecture is slow, and we can be frustrated by the ability to complete a project. The manifestation of the idea as a constructed entity is often removed from the current interest of the practice (the disappointment of building old ideas), but the measurement of ‘success’ in a project remains a perplexing process.

The research within this PhD defines a methodology by which the projects produced by iredale pedersen hook architects may be scrutinised and assessed in a qualitative framework, based on the agreed parameters and inherent value system underpinning the work. This has also allowed the architecture to be discussed and articulated more clearly in a public forum. The definition of the Field of Concerns is critical in the ability to establish an identity for each project and place it within the evolutionary output of the practice. Subsequent testing of the projects against the Concerns through the creation of spider diagrams enables the establishment of a visual process for evaluating the success of the projects against the aims of the practice and can be applied throughout the design process and upon completion. The Field of Concerns provides the framework to move the practice forward, to introduce new collaborators as the practice grows in size and to assist the partners in controlling the development of each project – avoiding dilution of the core values and, thus, avoiding diminished results.

The PhD has proposed a distillation of the values held by the partners of iredale pedersen hook and documented the manner in which these value systems, combined with personal and professional experience, are manifest in the architecture. The research, in alignment with the Master of Architecture by Project of Iredale and Pedersen, communicates a dynamic, evolving process of architectural research in practice. This process was realised through a number of major shifts: the iph Laneway Exhibition in Perth in 2005, where the practice output as a collected entity was first understood; the Constructing Families chart first presented at GRC05, where the polarity of the practice was exposed; and the identification of our ‘agenda’ through the New Trends in Architecture Exhibition in 2006. GRC06 provided the forum through which to translate and communicate our agenda as the Field of Concerns, and GRC07 marked our acknowledgement of the shift from polarity in the practice to fluidity – the truly collaborative nature of the architecture has been understood and expressed.

iredale pedersen hook now move into their tenth year together. As the commissions get larger, the business will have to grow, the number of staff will increase and the ability of the partners to exercise control over decisions will significantly diminish. How the practice responds to this typical dilemma shall determine the quality of its future projects. The output of this research establishes, importantly, a clear framework in which the architecture may evolve while maintaining the confidence, aspirations and ambitions of the practice’s three partners.
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Primary Sources


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