

## Resolution versus Responsibility: The gap between policy and ecological design-in-action.

Peter Diprose and Graeme Robertson

Peter Diprose, BA MArch, PhD Candidate.

Graeme Robertson, Senior Lecturer, Post-graduate Supervisor.

Sustainable Architecture Group, Department of Architecture, University of Auckland, PB 92019, Auckland, New Zealand.

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### **Abstract**

This paper is divided into four parts. The first section of this paper describes an 'ideal' emergent worldview - the new environmental paradigm. The acceptance of this new environmental paradigm - sustainability - leads to an expansion of the moral community - of individuals beyond their *present* intragenerational responsibilities to other members of the community, to *future* generations of humans, and to *nonhuman* nature. The second and third sections detail how this expanded position of environmental responsibility has been reflected by recent policy of the New Zealand Institute of Architects, and enquires as to its short-comings thus far. Has policy been translated into action? Suggestions on how policy may more effectively be converted into action are provided in the final section.

### **Introduction**

An emergent ecological paradigm has been acknowledged by the New Zealand Institute of Architects (NZIA) with their recent adoption of environmental principles, explicitly widening the responsibilities of the architect beyond the *present* client, user and the community, to *future* generations of humans, and nonhuman nature. This has been demonstrated through a range of initiatives from the creation and acceptance of NZIA Environmental Policy and associated Position Papers, to the incorporation of sustainability into the criteria for future national architectural awards. The provision of environmental standards embodied within *policy statements* however, may not in itself prove satisfactory for ensuring ecological design-in-action. A combined approach of incentives, legislation and education is required to guide and enable the profession towards responsible action. Above all, architectural (re)education must seek to (re)equip the practitioner with the means to design sustainable environments.

## **I: A New Environmental Paradigm (NEP)**

The global crisis of environmental sustainability constitutes an ineluctable anomaly to the beliefs and values of our present society (Ophuls, 1977). There is evidence to support a shift towards a new emergent set of environmental values which may lead the developed world into a sustainable future. Surveys of the general public (Dunlap and Liere 1978), and elite groups including environmentalists, business leaders, labour leaders, elected and appointed officials, lead Milbrath to conclude that there is "*solid evidence that a new paradigm is emerging, one which differs significantly from the dominant social paradigm. This emerging paradigm is being developed by environmentally oriented thinkers who constitute a kind of vanguard.*" Milbrath entitles this emerging paradigm '*the new environmental paradigm*' or (NEP) in contrast to the *dominant social paradigm*. (Milbrath, 1984, 1989, p119; Horsley, 1989)

### Environmental paradigms, sustainability and the extended moral community

It is maintained in this paper that the recently popular catch-all term - 'sustainability' - is synonymous with the new environmental paradigm's constellation of beliefs. 'Sustainability' may be taken as an abbreviation of 'sustainable development', a concept which embodies the notions of equity, futurity and the environment (Pearce, Markandya and Barbier 1989). Sustainable action is guided by the principle notion of 'intergenerational equity' - the bequest from present generations to future generations - while also adhering to a principle of 'intragenerational equity', based on the requirement for 'fairness' between persons within the same generation and with future generations (Pearce, Markandya and Barbier 1989; Tisdell 1990; Caruana 1992). Given these two human centred principles of equity, Turner and Pearce (1993) define the moral scope of sustainability, extending it to the natural environment - their principle reason for this being the non-substitutability of natural capital for man-made capital. They urge environmental responsibility on the basis that there are many environmental assets for which there are no man-made substitutes, reiterating that there is an increased risk of irreversible natural catastrophe if natural capital reserves are run down (Pearce, Markandya and Barbier 1989; Turner and Pearce 1993; Costanza, 1994). Although their formulation of sustainability is essentially instrumentalist, it is clear that because of the environment's role in supporting human life, humans have a vital, 'reciprocal', moral responsibility towards the environment.

A notion of an *extended moral community* is contained within sustainability's tenets of intra-generational, inter-generational and environmental responsibility (Opschoor, 1988; Peet, 1992). This same notion of extended moral community, can be identified in three different descriptions of the NEP all of which emphasise inclusiveness within the decision making processes - *consultation, participation, cooperation, openness, sharing and gender equality* (summarised in the table below). In the first of these descriptions, Blake (1990) suggests a model contrasting

*the structural characteristics of dominant social systems with the postulated characteristics of an alternative, sustainable social system.* In the second, Robertson (1993a) with reference to Pearson (1991), formulates a binary set of competing paradigms depicting an alternative, sustainable model of value and architectural practice. The third description of the NEP is by Milbrath (1989), its main proponent.

| Blake (1990)  | Robertson (1993a) Pearson (1991)               | Milbrath (1989)  |
|---|--|--|
| Recognition of intrinsic values; ecological ethics            | Recognise the interdependence of nature        | A high valuation on nature<br>A generalised compassion towards other species, peoples, generations |
| Social organisation - cooperative                             | Encourage knowledge sharing/open communication | Openness and participation within society  |
| Decision making to be a locally based participatory democracy | Be responsive to local social needs            | Consultation and participation within politics   |
| Gender equality   | Encourage male/female design approaches        |  |
| Mutualistic interpersonal norms                               |  | Cooperation within society   |
|   |  | Emphasis on foresight and planning   |
|   | Encourage community or self built projects     | Willingness to use direct action within politics   |

Table 1. *The extended moral community within the New-Alternative Environmental Paradigm (NEP).*

The final point emphasised in Milbrath's description of the NEP - *'the willingness to use direct action within politics'* or *creative responsibility*, might be legitimately associated with liberation movements such as feminism and anti-nuclear environmentalism (Cotgrove and Duff, 1980; Kenny 1992). Kenny (1992) suggests that the exercise of creative responsibility, expands the boundaries of moral consciousness, and may in the long term contribute to a rearrangement of components and priorities within the moral universe - the mechanism for paradigm shift perhaps?

## II: The New Environmental Paradigm and the augmentation of NZIA policy

Kenny (1992) states that if the human species wants to enjoy a harmonious and sustainable future, both with one another and the biophysical environment, then the greatest moral task is that of design. It must be recognised that architects as design-decision makers, have significant moral agency in the transferral of natural resources into man-made capital, and must consider their responsibility in their creation of potential environmental hazards (such as carbon dioxide emissions).

The New Zealand Institute of Architects (NZIA), has acknowledged wider responsibility arising from an emerging environmental paradigm, in the adoption of recent environmental policy documents. These new policies extend the architect's moral responsibilities explicitly, beyond that of the *present* client, user and the community, to *future* generations of humans, and to nonhuman nature.

Until 1992 the documented responsibilities of the registered architect were restricted to the statement of professional ethics set out in Architects Education and Registration Board's (AERB) Code of Practice and Professional Conduct (1988. figure 1 below). An architect must follow these principles or face censure. As a last resort they may be struck off the register and thereby denied the legal use of the title 'architect'.

*Principle 1. An Architect shall faithfully carry out all duties undertaken, and shall also have a proper regard for the interests of both those who commission and those who may be expected to use or enjoy the product.*

*Principle 2. An architect shall avoid actions and situations inconsistent with professional obligations or likely to raise doubts about integrity.*

*Principle 3. An Architect shall rely on ability and achievement as the basis for advancement.*

*Figure 1. Extracts from the AERB Code of Practice and Professional Conduct (1988)*

The Code of Practice and Professional Conduct's three principles, clarify the responsibilities of the professional architect. Dealing with these principles in reverse order, the third and final principle, governs the relationship between architects - the polite rules of intra-professional etiquette. For example an architect must demonstrate restraint when advertising their services, ruling out television advertising or indiscrete site hoardings. The second principles makes reference to the integrity of the relationship between architect and client. This entails the avoidance of any situation that may compromise the best interests of the client, for example

taking income from two sources, such as accepting product endorsements while specifying the use of that product in ones professional capacity<sup>1</sup>.

The first principle, refers to the architect's responsibilities to the client, but in its final clause notes that the architect must also act responsibly towards those *who may be expected to use or enjoy the product*. This clause extends the responsibilities of the architect beyond the client to *other users*. But to whom does a *reasonable* expectation of use pertain? If the Code of Practice and Professional Conduct is read in tandem with the New Zealand Building Code (1993) a reasonable expectation of use for a 'permanent' building might embrace a range of functional possibilities over a minimum period of 50 years - perhaps two to three generations of users. Although a level of intergenerational responsibility may be inferred from principle 1, no explicit statement is made. An expression of the architect's responsibility towards nonhuman nature is also difficult to locate in these principles.

In 1992 the NZIA moved to clarify their commitment to sustainability, augmenting the AERB Code of Practice and Professional Conduct with separate environmental policy documents. The NZIA Environmental Policy, the details of which are contained in the first of a series of papers, although not carrying the same imperative of the AERB document, lays out guidelines for members. This shift in policy is congruent with the NEP.

(It must be pointed out that it is not mandatory for registered architects to be members of the NZIA. At present 85% of active registered architects are members<sup>2</sup>. Thus although an 'architect' must comply with the AERB Code of Practice and Professional Conduct, if she is not a member of the institute then she is not bound by institute policy.)

Although Policy and Position Papers are not strictly binding on architects, they are informative, and consequently may become binding via legal precedent in the future. This may occur out of the process of: firstly, environmental policies moving towards acceptance as common practice; secondly, through the bulk of architects being made aware of these practices via the environmental policy documents mailed out to *all* members of the institute; and thirdly assisted by litigation taken by dissatisfied clients against architects who persist with past 'unsustainable' practices. This process is analogous to designers being sued for negligence for specifying blue

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<sup>1</sup> On the basis of a complaint made to the AERB an architect was recently taken to court, for appearing in a print advertisement as an architect who enjoyed a particular brand of whisky. I am uncertain whether the complaint was made because whisky endorsing/drinking was inconsistent with the professional obligations of an architect (Principle 2 ), or whether his ability and achievement in whisky consumption was being challenged in conjunction with the use of superlatives or comparatives between himself and other members of the profession? (Principle 3) He was found not guilty.

<sup>2</sup> There are 1130 active registered architects of which 960 are members of the institute - personal communications with officers of the NZIA.

asbestos, while being ignorant of its deleterious effects on human health, in spite of warnings sent to designers from their institute. Ignorance is not a valid defence for non-members.

Subsequent 'Position Papers' provide background material to the Environmental Policy. For example, professional responsibility towards the environment is clarified in Environmental Position Paper 10 (Watkins, 1993), which alerts architects to particular aspects of Agenda 21 (UNCED,1992) noting that "*the boundaries of the site no longer define an architects limit of concern....[and] the professional role of architects, which is concerned with a commitment to the environment beyond a commitment to an individual client, is more important than ever...Architecture is to be seen as a means of bringing about change...[and] Architects will need to develop skills in participatory building and environmental stewardship.*"

Selecting creative sustainability - 'Papatuanuku' as the theme of the 1993 National Architects Conference was an explicit commitment to the ethics of the new environmental paradigm, reinforcing the position established by environmental policy.

On Earth Day 1993, the NZIA became a signatory to the UIA/AIA Declaration of Interdependence (1993) which recognises the "*intrinsic value of the natural environment , the partnership, equity and balance among all parties and education for all, on the importance of sustainable design*". Signing the declaration and the recent incorporation of sustainability design criteria into future NZIA national architectural awards (Scott, G. 1994) further signals a shift towards the NEP. (The emergent NZIA environmental position is detailed beside a summation of the relevant points from the NEP, refer to table 2 below) Despite the adoption of these policies, the question remains as to what action has been taken by practitioners towards the (re)design of sustainable environments?

|  |   |
|--|---|
| Summary of the NEP (from table 1)  | The environmental position of the NZIA  |
| Recognition of intrinsic values; ecological ethics                           | Intrinsic valuation of the natural environment (AIA/UIA 1993)   |
| Openness, participation cooperation within society/politics, gender equality | Partnership, equity and balance among all parties.(AIA/UIA 1993)<br>Participatory building (NZIA EPP 10, 1992)                |
| Foresight, planning and willingness to use direct action                     | The importance of sustainable design. (AIA/UIA 1993)<br>Architecture is a means of bringing about change. (NZIA EPP 10, 1992) |

Table 2. The extended moral community within the New Environmental Paradigm (NEP) summarised and compared with the environmental position of NZIA. (Environmental Position Paper - EPP)

### III: Beliefs/Policy has not necessarily been translated into action

Pearson (1991) states that *'as our society's paradigm gradually shifts, so too will design. There is now a wave of change spreading through the design and building professions. Still embryonic... there is a growing number of architects and designers who display a definite change of attitude and who show a feeling of responsibility* . Pearson's wave of change appears more of a ripple, swamped by the plurality of architectural ideas that confront today's designers. Although NZIA policies call for extended responsibility in decision-making, at present this does not appear to be carried through into the construction of sustainable architecture. Four possible causes of this are given - the tenuous link between attitudes and behaviour in general ; a lack of knowledge about the practical application of sustainability; the potential conflict between client responsibility and environmental responsibility; and resistance to singular theories and 'constraints' on architectural freedom.

The link between attitudes and behaviour is often rather tenuous, especially when dealing with very general attitudes such as those embodied in the NEP (Schuman and Johnson, 1976). Consequently, it would be naive to expect individuals who endorse the NEP to consistently engage in behaviours congruent with the new worldview (Dunlap, 1978). Thus architects while happily endorsing the thesis of sustainability, may continue to engage in unsustainable design practices.

It is disabling to tell the profession to 'be responsible', when little information or apparent direction seems to be offered on how to practically achieve sustainability. An overall lack of knowledge in the workplace has translated into a lack of action.

The architect may be torn between the practice of environmental responsibility and responsibility to meet the client's wishes. A client's adherence to the unrestrained free market, often conflicts with the long term thinking of sustainability - unless sustainable solutions can be justified in terms of short term reward (White and Cock, 1991).

If sustainability is cast as a singular thesis of restriction, its application will draw resistance from the supporters of post-structuralism, who understandably share a distaste for any (external) controls on formal freedom. Hunt (1992) comments on sustainability and post-structural thought, citing Burges, who notes the scepticism of current times, the - *'anything-goes' pluralism of historical styles in the name of communication; ... has seen computer driven methodologies of logic sit side by side with a new art-for-art sake in architecture, with each new agenda citing a scientific or linguistic theory to give the work an aura of legitimacy and inevitability'*. The question remains as to whether 'sustainability' can be accepted as *necessary* design criteria, at a time when we can *'no longer practice the dogmatism of single truth'*. In reality of course, design freedom *is* limited through legislation representing society and the environment, beyond the interests of client and architect.

#### **IV: Policy into Action**

Given that the NZIA are committed to the NEP via their policy, what can be done to ensure that policy is carried into action? A two pronged approach is advocated - the objective being to influence *community* behaviour and influence *professional* behaviour.

##### Influencing Community Behaviour

Environmental practice can be facilitated by diminishing architect/environment and architect/client clashes of responsibility by re-creating the market-place to encourage client demand for environmentally responsible architecture. Increasing the desire for sustainable architecture can be achieved via education, incentives and legislation (Robertson, 1992b).

##### 1. Education and creation of a desired image of sustainability

Future generations of clients could be educated through courses on architectural and environmental appreciation, taught at primary and secondary school level (within the science and social studies curriculum). Key objectives of the program should include the valuation of non-

human nature, and conceptualisation of the built (artificial) environment as interconnected with the natural ecosystem.

Information on sustainability should also be made available to present generations of clients. This already occurs to a limited extent through groups such as the Building Biology and Ecology Institute in Auckland; the Centre for Education and Research in Environmental Strategies in Melbourne; and the EcoDesign Foundation in Sydney. By the end of 1994, architecture students from University of Auckland intend to distribute information on sustainability through home building centres.

Fry (1994) recommends that generating a desirable ecological imagery in design will assist client imagination - and encourage their support of sustainability. Although semiotic reference to the crisis of sustainability is desirable, this should not conflict with attendance to the actual ecological problem.

## 2. Direct action by the NZIA

The NZIA could take direct action to encourage environmental architecture especially the sustainable development of major projects, similar to Greenpeace's architectural input to the Australian Olympic Games 2000. Advertising campaigns could also be organised following the example of the anti-smoking lobby, towards the promotion of healthy and ecologically responsible architecture.

## 3. Market controls/incentives

Legislation and incentives could be introduced requiring architects to demonstrate long term benefit and overall systemic resilience of their design proposals. For example resource management legislation could be extended to include the conservation of the artificial (as well as the natural) i.e. the proposed (re)design of existing buildings. The life-cycle of building proposals might also be documented within environmental reports, to encourage the consideration of reuse, easy redesign and/or loose-fit design criteria.

The need for overall systemic resilience should also be reflected within the building codes. For example codes setting minimum standards of carbon dioxide emission/energy use over life cycle could be combined with tax incentives/loans to encourage long term design benefits.

## 4. Research and ready information

Research funds could be directed towards developing standard codes for alternative building materials to facilitate access to appropriate sustainable building techniques.

## Influencing Professional Behaviour

### 1. University training for design professionals

This paper maintains that preliminary design (in architectural practice) is flawed if it cannot accommodate ecological responsibility. Preliminary design strategies that either encourage or at least have the ability to include issues of sustainability must be taught and assessed at some stage in architectural design courses.

Re-education of practicing architects through *free* continuing professional development design workshops and discussions should be promoted. The bulk of active designers are those already in practice, and it is that group who are most likely to influence the design habits of recently graduated architects. A process lead by environmental building legislation, could be followed by workshops to provide clear design guidelines. Susan Scott (1994) notes that it is essential for those in the architectural profession to stay up to date through professional development programs.

### 2. Checklists as a simplification of ecologically responsible design (ERD)

Quick and effective means of implementing ERD principles need to be taught. Some local practitioners have called for checklists, a view reinforced by foreign literature (St John, 1994)<sup>3</sup>. The checklist desired appears to be a prescriptive document with terms of reference which include the *final* technical design stages only. Berkebile refutes this stating that one must - "*understand that sustainable design is a philosophy. Its not a list of do's and don't's about materials, site development, and building systems. It's a holistic ethic ...*" (Gilman, 1992). However this may cause problems to some architects, especially if they haven't fully developed an environmental philosophy. A 'checklist' which offers a set of design 'norms' would be useful to the architect in her period of philosophical transition towards that *holistic ethic*.

Phillips and Clarke (1991) state in their charter for environmental professionals that '*members shall ensure the incorporation of environmental protection considerations from the earliest stages of project design or policy development.*' A technical checklist is inadequate if the preliminary design remains ecologically sub-standard. A *design* checklist is required to augment the desired technical checklist. This could take the form of a non-prescriptive set of questions (Burrall, 1991), by which the architect may interrogate the proposal from the point of first conception.

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<sup>3</sup> The title of St John's article suggests that material specification is not the answer - but the author proceeds to list a series of technical issues to be addressed - for example keeping human waste and grey water separate.

### 3. Creation of a desired image of sustainability - design exemplars

Built examples of sustainable architecture can promote sustainability through their action as *design models*. Design models must be treated with caution. For example, The creation of an ecologically responsive housing model may be desirable, but iconic design strategies which draw architecture from exemplars risk failure through under-informed transformations (Broadbent, 1973). Iconic procedures in tandem with a 'design checklist' recommended above, may provide a more adequately informed design process, and encourage a greater diversity of form.

### 4. Coping with complexity and systemic interconnectedness

*'The new model of the designer's world is more complex than before. Within this complexity exists a potential range of new relationships and responsibilities, many of which have ethical implications.* Lamb (1991)

At worst, recent practice conceives architectural design as removed from ecosystem and community. This problem resides in the nature of the commission by which architects are given the task of designing 'discrete' objects. Although it cannot be denied that the architect's role has always included advocacy on behalf of the environment and the community, under the ecological model made explicit through NZIA Environmental Policy (1992), the designer has renewed ethical responsibilities to maintain the resilience of the ecosystem. Lamb (1991) contends that if this task is to be taken seriously, a more complex design model arises - the architect having to think beyond the building and the site, to meet the exigencies of interconnectedness. However it is uncertain that ecological interconnectedness will necessarily increase design complexity. Instead, not more but different design information might be brought into the problem space, incorporating greater reliance on 'best-option' directives from planners and other environmental specialists to provide an overview of the design problem beyond the site.

An example of teamwork between environmental design specialists, focusing on a narrow but crucial facet of sustainability - the energy efficiency and viability of a single building - can be seen in the ongoing design of the Energy Research and Development Corporation Building at Canberra. From the beginning of the project Taylor Oppenheim Architects instigated an environmental design process based around a team comprised of client/user, architect, mechanical and electrical engineer, structural engineer, energy adviser, civil and hydraulic engineer. The members of this group met together in a sequence of design charrettes, setting themselves an uncompromising goal of producing a workable low energy/sustainable office building (Oppenheim, 1994). Although this particular project did not utilise as wide a range of environmental advisers that may be required to deal with the interconnected systems of a multi-

building urban development, this example of intensive teamwork begun at the outset, provides a basic model which may become the norm for the architectural profession in the future.

A complementary approach to that of teamwork, as a solution to complex design situations arising out of systemic interconnectedness, may be found in particular techniques to reduce complex information to simpler more manageable chunks. 'Rules-of-thumb', checklists and other means of prioritising design determinants could be very useful structures for architects as long as they meet desired environmental objectives.

## **Summary**

The NZIA has to be commended for their commitment to the new environmental paradigm, and distributing quality information to their members. Moreover, although the constellation of beliefs acknowledged in the NZIA Environmental Policy Position Papers have yet to feed through into mainstream architecture, the range of alternatives for influencing community and professional behaviour listed above may facilitate the shift from sustainable policy to sustainable action. Beyond incentives and legislation, (re)education is the key to guiding and enabling the profession towards responsible action. In summary, specific areas for future research directed at guiding design professionals towards the application of environmental policies include the following:

- (i) locating formal design exemplars - icons/types/patterns; carrying out critical analyses of their respective socio-cultural merits; together with empirical studies of their actual 'sustainable' performance through case studies of model buildings in various regional contexts.
- (ii) Generating theoretical design models to assist practitioners manipulate complex environmental design information.
- (iii) Examining techniques and structures to encourage teamwork and collaboration between design professions, and the community.

The community and the professions have a vested interest in seeking partnerships to assure environmentally responsible action, now and in the future. It is imperative that the values embodied in the new environmental paradigm are acted on.

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