

**Architecture, Discourse and the Environment:**

**Architectural Conversations**

by

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## *Abstract*

In this thesis I contend that certain tacit assumptions about the nature of discourse in the field of architecture have served to reduce the role of architecture in environmental issues to the articulation of technologies that seek to minimize the quantifiable impacts of architectural artefacts on environmental systems. In this role, I contend that architecture's engagement with environmental concerns serves largely to reinforce an existing conceptual positioning that allows (and perhaps even assists) environmental exploitation.

Drawing upon Justus Buchler's theory of human judgement, and employing theories of discourse and discourse analysis by James Gee and Maarten Hajer, I critique these tacit assumptions, and argue, in their place, for a broader sense of architectural discourse which, in turn, reveals architecture's greater potential as a means by which to explore and challenge current understandings of and to provoke new understandings of the relationship between the 'human' and the 'non-human' in our postmodern context.

Drawing upon Aidin Davison's critique of instrumental perceptions of technology, and upon writings on environmental ethics by Anthony Weston and Edward Hill, I further contend that the focus of most current architectural environmental discourse on the quantifiable aspects of buildings has inadvertently encouraged the architectural profession to overlook the more fundamental role that architecture necessarily plays in the shaping of environmental ethics.

I then explore the implications of these contentions through multimedia images and an imagined dialogue which together propose a series of mobile shelters in Ottawa for the Greek cynic philosopher Diogenes and his followers.

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## *Introduction*

Increased awareness of the scope and significance of the environmental impacts of various human activities has afforded environmental concerns arguably more significance in the architectural profession today than at any time in the past. Contemporary architectural publications, professional seminars and institutional programmes abound with discussions of green, ecological, environmentally responsible and sustainable designs. Most of these discussions, however, have been shaped by an underlying tacit assumption that discourse is limited to ‘language in use’ or ‘rhetorical strategy.’ This assumption has subsequently served to reduce the role of architecture in environmental issues to the articulation of technological strategies that seek to minimize the quantifiable impacts of architectural artefacts on scientifically described environmental systems.

In this diminished role, architecture’s engagement with environmental concerns is at best conflicted, and at worst contradictory, serving largely to reinforce an existing conceptual positioning that allows (and perhaps even assists) environmental exploitation, while encouraging the evaluation of architecture in quantifiable terms of performance that necessarily initiate endless chains of value deferral.<sup>1</sup>

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<sup>1</sup> As noted by Francois Lyotard in *The Postmodern Condition: A Report on Knowledge*, (Minneapolis: University of Minnesota Press, 1984), the evaluation of any ‘means to an end’ in the quantifiable terms of its success and/or efficiency in securing that end demands (for the sake of consistency) the subsequent evaluation of that end as a means to another, further end. An endless chain of value deferral from ‘ends’ to ‘ends as means to yet further ends’ thus necessarily results.

Drawing upon Justus Buchler's theory of human judgement, and theories of discourse and discourse analysis advanced by James Gee and by Maarten Hajer, I argue for a broader sense of discourse and of the role of architecture therein than is assumed by the current focus of architectural rhetoric and practice on issues of environmental performance. Within this broader sense, I contend that architecture offers a unique means through which to explore and challenge our current understandings of the environment and environmental issues, and to thus provoke new understanding and re-conceptions of environmental problems, broadening the spectrum of appropriate responses that may be entertained.

Noting the problematic nature of legitimation in the postmodern age, I then draw upon writings on environmental ethics by Anthony Weston and Edward Hill in order to contend that the architectural profession's current attempts to secure legitimacy through the pursuit of environmental performance have caused it to overlook the more fundamental role of architecture in shaping environmental ethics.

With my argument thus established through rhetoric, I then explore this argument in project form through images accompanied by an imagined dialogue. The project proposes a series of mobile shelters in Ottawa for the Greek cynic philosopher Diogenes and his followers. In keeping with the thesis' theoretical argument, the intention of the project is not to suggest a solution in built form to the societal problems of indigence, homelessness and environmental degradation, but rather to explore through architecture the condition of homelessness and what it may reveal about the ways in which we currently conceive of environmental problems and related ethical issues.

## *Use of Terms*

The textual discourse of architecture currently abounds with discussions of design approaches that engage environmental concerns, and advances these approaches under a bewildering variety of terms, including, among many others, ‘sustainable,’ ‘environmental,’ ‘ecological,’ and ‘green’ design. The use of these terms, however, is seldom clearly defined, and the assumptions relied upon in the construction and use of them is similarly seldom explained. For the sake of clarity, the definition of certain terms used throughout this thesis is required from the outset, as is an explanation of the various assumptions upon which my argument necessarily relies.

In this thesis, I simplify the various distinctions that have been made between ‘built’ and ‘natural’ environments to a distinction between human interventions in the world, and those things that exist despite such interventions, and I refer to the two hereafter as the ‘human’ and the ‘non-human’ respectively for the sake of brevity. This simplification is made in order to avoid those arguments that necessarily arise from attempts to distinguish between the human and the natural, or the natural and the artificial.<sup>2</sup> Though relevant and significant, such arguments are not central to this thesis’s primary concern.

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<sup>2</sup> Arguments can readily be made that challenge the separation of human and natural worlds on the basis of evolutionary theory, or that demonstrate the ways in which global environmental impacts have left no part of the earth unaffected by human endeavour. Such arguments, however, are not central to the purposes of this thesis, and, in the interests of concision, have been avoided here.

I also accept as given the argument implicit in any discussion of environmental concerns that an imbalance exists in the relationship between the 'human' and 'non-human' wherein the latter suffers disproportionately, and I rely, without further demonstration, upon such well known, quantifiable and diverse impacts as ozone depletion, increases in surface runoff and erosion, and decreases in the biodiversity of various ecologically sensitive regions as supporting evidence of it.

I also assume that 'sustainable,' 'environmental,' 'ecological' and 'green' design approaches can be collectively distinguished from other approaches in that they seek primarily to redress this imbalance, and that, in so doing, these design approaches draw largely upon the broader environmental discourse of 'sustainable development.'

I also contend that 'sustainable development' is the current dominant discourse involving environmental issues and architecture, inasmuch as it dominates the conceptualizing of environmental problems (and thus architecture's entrance into environmental discourse), and inasmuch as it has been translated into various institutional arrangements. As evidence of this I rely without further demonstration on the prevalence of the rhetoric of sustainable development in various architecture school programmes, in most architectural publications, and in such prominent institutional instruments as the LEED program.

Lastly, I assume that although we apprehend the environment through the various ways in which we characterize, describe and engage with it, the understanding of the environment that results from these processes of apprehension

simultaneously shapes the ways in which we are likely to apprehend the environment. As such, and given sustainable development's position as the dominant environmental discourse, any examination of the current and potential role of architecture in engaging environmental concerns requires, from the outset, an exploration of the ways in which sustainable development constructs the environment and suggests appropriate ways of engaging with it. Because sustainable development (as I will strive to demonstrate) is in many ways a response to the failures of previous environmental discourses in addressing environmental concerns, its remarkable current popularity is perhaps best understood by examining the context in which it developed.

## *Constructions of The Environment*

### *i) The Notion of Limits to Development (1940's to the 1970's)*

Although concerns with particular aspects of what we now call 'the environment' such as open spaces, resource shortages, and localized incidents of pollution had been expressed much earlier, it wasn't until the second half of the twentieth century that a number of interrelated developments lead to the formation of 'the environment' as an concept, and more importantly, as a concept with social and political implications. Chief among these were significant changes in both the populations and popular perceptions of developed nations that occurred in the years immediately following World War II.

Alongside an unprecedented scaling up and acceleration of industrial (and more particularly chemical) production, the developed nations of the 1950's and 60's saw the emergence of a new middle class whose unprecedented access to material goods and higher education caused them to question certain assumptions of previous generations about the relationships between development, human welfare and the environment.

Able to acquire more and a wider variety of material goods, this population began to recognize an inverse relationship between the availability of goods and the perceived quality of those goods, which it articulated as the concept of 'social

scarcity,' challenging the previously unquestioned<sup>3</sup> promise of material progress. Provided with increased access to higher levels of education, this population also became increasingly confident in its own critical faculties and knowledge base, and began to enter discourses that had previously remained the exclusive domain of certain experts. Surrounded by technological developments in new media, this population began to situate itself in an increasingly international and global context. Having been raised in the shadow of two World Wars, however, it remained suspicious of technology's previously unchallenged promise of liberation.

As these changes began to shift public and personal emphases from matters of economic and physical security towards 'post-material' values of individual human growth and the satisfaction of intellectual and aesthetic needs, the previously unquestioned assumption that economic growth and development were equated with social progress was severely shaken by increased public awareness of the negative impacts of development. In associating the degradation of natural systems, the depletion of natural resources, and the spread of malnutrition in the developing world with accelerating rates of population growth, the public began to develop a reflexive awareness of issues as global, environmental issues.

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<sup>3</sup> Though challenges to the notion of material progress had been made much earlier by such individuals as Thomas Malthus (1766-1834), such challenges were largely dismissed by the public as reactionary, and, as in Malthus' case, were often reviled by the larger population as discriminatory on the basis of both class and religion. In considering the case of Malthus, it is worth noting that his arguments were largely discredited by more than 200 subsequent years of increased living standards. For further discussion see D.V. Glass's Introduction to Malthus, (London: Watts, 1953), and Malthus' own pamphlet "Essay on Population," 1798.

With the international broadcast in 1968 of the Apollo 8 mission's images of the earth as a solitary planet in the void of space, a global perception of the earth as a shared and finite resource was galvanized, and the attendant implication that there were likely limits to physical development entered the public consciousness.

Alarmed by the fact that humanity appeared to be approaching these limits at an accelerating rate, and that an environmental (and therefore human) catastrophe of unprecedented scale would likely result, certain coalitions of actors<sup>4</sup> began to identify economic and environmental concerns as joint concerns that required proactive rather than reactive international cooperation. These coalitions have since been grouped together under the heading of the 'limits discourse.'<sup>5</sup>

In formulating the global environmental problem, the limits discourse identified the collapse it was forecasting as the unintended but inevitable end result of individuals pursuing their own self-interests within decentralized systems. As such, they contended that liberal democracies and free markets at best assisted and at worst institutionalized environmental despoliation, and argued accordingly for remedy through forms of mutual coercion mutually agreed upon. In structuring the identification and implementation of appropriate forms of coercion, the limits discourse turned

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<sup>4</sup> Most notable among these was The Club of Rome, which, in 1972, drew upon the legitimacy attached at the time to the emerging field of cybernetics, and, by projecting existing trends through computer models, sought to demonstrate that the limits of the earth's carrying capacity were being approached at an accelerating rate. The results of this modeling formed the basis of their most widely circulated and famous publication: Meadows, Meadows, Behrens and Randers, The Limits to Growth, (New York: Universe Books, 1972).

<sup>5</sup> For a more comprehensive outline of the various strands comprising the limits discourse, see John Dryzek, The Politics of the Earth: Environmental Discourses, (New York: Oxford University Press, 1997) pp.23-44.

to those models provided by existing public policy traditions in the fields of defence, public health engineering, and resource management, wherein substantial status was accorded to scientific experience as harnessed by the administrative state, and wherein policy was determined and implemented through a hierarchical bureaucratic structure. In adopting this model, it advanced a perception of the environment as a finite stock of mere resources with a limited carrying capacity, in which populations, as aggregates of individual actors bereft of agency beyond their own limited self-interests, were to be managed through a bureaucratic hierarchy governed by academic, scientific and governmental elites. The explicit aim of this management, it argued, would be to shift the world toward a static economy and stable population level, or, failing that, to establish the developed countries as stable economic and population ‘lifeboats’ afloat on an otherwise sinking planet.<sup>6</sup>

Developed largely by well-heeled industrialists and certain academics sympathetic to their interests, the limits discourse accepted as given the capitalist industrialist system in which it was conceived. In its drive towards a static economy and stable population, however, it challenged the key conceptual underpinnings of development, and, for

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<sup>6</sup> This position is perhaps most clearly expressed in Garrit Hardin’s “Living in a Lifeboat,” in Managing the Commons, (San Francisco: W.H. Freeman, 1977), pp 261-79. For further discussion of limits implications for developing as opposed to developed nations, see also Paul Ehrlich, The Population Bomb, (New York: Ballantine Press, 1968), and Paul and Anne Ehrlich, The End of Affluence: A Blueprint for Your Future (New York; Ballantine Press, 1974).

arguably the first time, forced advocates of economic growth to articulate their key tenets in a response that has since been termed the ‘Promethean’ or ‘cornucopian’ discourse.<sup>7</sup>

Though arguments and theory supporting economic growth against the notion of limits can be traced back to the 1960’s, the Promethean discourse did not gain prominence until the 1980’s when it was first associated with the economic policies of Ronald Reagan’s presidency. Refuting the very existence of natural limits, the Prometheans dismissed the limits discourse’s catastrophic projections as erroneous, noting that the computer models on which the limits discourse’s projections relied had failed to account for two of the arguably most significant mechanisms in a open capitalist economy: fluctuations in price, and technological advances. Drawing, in contrast, upon empirical evidence, the Prometheans argued that human agents, when faced with depleting natural resources and unhindered by state regulations, would necessarily develop new resources to replace diminishing ones as a simple matter of economic self-interest. To counter those existing trends which the limits discourse had extrapolated into forecasts of disaster, the Prometheans advanced empirical evidence of such positive global trends as increasing average life spans and growing access to material goods. Pointing to the disastrous environmental consequences of centralized authoritarian regimes in east bloc countries, they argued that the forms of mutual coercion advocated by the limits discourse were not only

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<sup>7</sup> It remains uncertain as to when and by whom the terms Promethean and cornucopian were first applied to the discourse of limits deniers. The term Promethean is used in this thesis in place of the term cornucopian in acknowledgement of the criticism made by Julian Simon and others that the term cornucopian unfairly portrays limits deniers as having faith in the endless bounty of nature, instead of the endless bounty of human ingenuity. See Julian Simon, The Ultimate Resource, (Princeton: Princeton University Press, 1981). For a more comprehensive outline of the various strands comprising the Promethean discourse, see Dryzek, pp. 45-60.

ineffective, they were, in fact, counterproductive. Only through the unfettered deployment of market mechanisms, they contended, could environmental concerns be dealt with effectively, at low cost, and with little to no public or economic resistance. They similarly dismissed environmental degradation within capitalist economies as the result of limitations already placed on markets, and argued, in place of governmental intervention, for the abolition of all environmental regulations, and for the extension of property rights to include all aspects of the environment. According to the Prometheans, the ultimate solution to global environmental problems was to make the world's populations rich.

Whereas the limits discourse viewed the environment as a set of resources, the Prometheans claimed that resources themselves existed solely by virtue of their economic value, and that the environment could accordingly be further reduced to an economic system. As this system was itself the end result of an ongoing process of 'indigeo ergo est,'<sup>8</sup> they contended that the notion of physical limits was necessarily meaningless. New resources, they claimed, could and would be invented endlessly in response to ever changing conditions, provided, of course, that populations, as collections of individual economic actors, were encouraged or at least permitted to operate in their own self-interests. The only limits that existed, they jubilantly decreed, were the limits of the human imagination, in which case the limits discourse's preoccupation with population control was at best unnecessary, and perhaps even undesirable.

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<sup>8</sup> Latin: "I need therefore it is."

Though the Promethean discourse continues to influence environmental rhetoric today,<sup>9</sup> it had little to no direct influence on early environmental policy. As public concern over environmental issues increased, nations and international organizations enacted measures more aligned with the forms of mutual coercion advocated by the limits discourse than with the Prometheans' market mechanisms. This policy direction, however, was arguably less the result of any debate over the existence or absence of limits, and more the result of practical concerns, given the facts that doing nothing was becoming increasingly unacceptable politically, and that existing policy instruments were more readily adapted to the limits discourse model than the Promethean model. The resulting approaches to environmental issues that were developed from existing public policy traditions have since been gathered together under the term 'administrative rationalism.'<sup>10</sup>

Sharing the limits discourse's preference for a centralized hierarchy governed by scientific expertise, administrative rationalism focussed its initial energies on developing and advancing such centralized instruments of control as natural resource management agencies, pollution monitoring agencies, and environmental regulations, and placed within these

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<sup>9</sup> Similarities to the Promethean discourse are clearly evident in any number of right-wing environmental think-tanks- see S. Beder, Global Spin: The Corporate Assault on Environmentalism, (Vermont: Chelsea Green Publishing Company, 2002), chapters 5 and 6. As Beder suggests of think-tanks in general, perhaps the most significant effect of the Promethean discourse has been in establishing the general currency of its ideas among academics, politicians and economic journalists, and in subsequently shifting the whole policy agenda to the right. In this regard traces of its arguments arguably underlie sustainable development's concern with aligning environmental and economic interests.

<sup>10</sup> For a more comprehensive outline of the various strands comprising administrative rationalism, see Dryzek, pp.61-119.

instruments a clear emphasis on coercive regulatory ‘end of pipe’ measures, and on such rationalistic policy analysis techniques as cost/benefit and risk analyses.

Though administrative rationalism obtained substantial initial gains in dealing with highly visible and relatively simple environmental issues, when faced with problems of increasing complexity it soon began to deliver diminishing returns. Its organizational structure, which favoured centralized experience and power ordered within a top-down hierarchy, was fundamentally unsuited to the decentralized interdisciplinary work demanded by the increasingly complex environmental problems it faced, and was similarly unsuited to the transmission of knowledge gained from such interdisciplinary engagement back up the hierarchy to those individuals shaping policy. The environmental issues it tackled were thus often fragmented, leading to issue displacement wherein perceived advances in one environmental sphere were gained only at the expense of another.<sup>11</sup>

Having conceived of the environmental problem in a manner akin to the limits discourse, administrative rationalism similarly failed to account for the political reality of actors affecting policy in their own interest, and for the possibility of conflicts arising between environmental and economic interests that were both in the public good. From these oversights, a tension arose between environmental and economic interests that would heighten in subsequent years with increasing globalization.

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<sup>11</sup> For example, various ‘end of pipe’ industrial pollution restrictions in the United States in the seventies resulted ultimately in the translation of air pollution into water pollution, or vice versa.

As the effectiveness of administrative rationalism came increasingly into question, so too did the esteem of scientific expertise on which it had relied so heavily for legitimacy. As the scale and complexity of industrial production continued to increase through the sixties and seventies, and as increased access to higher levels of education raised public awareness of the possibility of systemic failure, public fear of potential industrial catastrophes grew, and was eventually realized in a number of well publicized international environmental disasters.<sup>12</sup> Growing public suspicion of experts' ability to manage increasingly complex and dangerous technologies shifted the public's perception of scientific professionalism from one of efficient rationality to one of myopic carelessness, and, in so doing, removed the key underpinning instrument from administrative rationalism's promised pursuit of perfectability.

By limiting its conception of populations in the environmental equation to aggregate groups of actors capable of exerting influence only in limited matters of individual self-interest, administrative rationalism also failed to account for the agency of individual actors or groups of actors in matters of public interest. As increasing numbers of the public began to articulate and identify with an increasing feeling of alienation and loss of moral community, a different, public characterization of the environmental problem as a largely social and political (rather than technological) issue began to emerge. By ignoring this characterization and continuing to search for technological solutions to deploy within existing

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<sup>12</sup> Perhaps chief among these were the dioxin emissions in Seveso, Italy in 1976, the linking of illnesses with levels of pollution in the Love Canal in Niagara Falls, New York in 1978, and the Three Mile Island nuclear incident near Middleton, Pennsylvania in 1979.

frameworks, administrative rationalism served to further reinforce a public perception of its experts and technocrats as insensitive to the larger population's actual experiences and needs.

Whether administrative rationalism could have adapted to this new conception of the environment is questionable. As public criticism began to increasingly challenge the motives and accomplishments of western democratic capitalism, it gave rise to the increasing suggestion that structural changes were required. Believing that they faced an ecological imperative, many advocates for such structural change assumed that their demands were non-negotiable, and standoffs between competing values ensued wherein, on the one hand, mass demonstrations demanded the complete capitulation of existing institutions,<sup>13</sup> and, on the other, individuals and groups sought to extricate themselves entirely from existing frameworks by adopting alternative lifestyles.

The 'entrenched position' of many environmental activists began to soften in the early eighties, as the economic recession of the late 70's shifted public emphasis back from environmental issues to matters of individual physical and material security, and as the unfulfilled promises of years of mass demonstrations suggested that they had hindered rather than helped the advancement of environmental and social issues.

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<sup>13</sup> Perhaps most indicative of this impasse are the various demonstrations staged against nuclear power generation in the late seventies and early eighties, of which the demonstrations in Seabrook, New Hampshire in 1977, in Brockdorf, West Germany, in 1977, in Windscale, England in 1978, and in Washington D.C., 1979 are notable examples.

In addition, a new type of environmental problem had emerged with the identification of such issues as acid rain, global warming and the depletion of the ozone layer. These new environmental concerns were less physically apparent phenomena than such previous emblematic concerns as nuclear power generation stations, oil tanker spills, and the clear-cutting of old growth forests had been, and were of increasing scientific, economic, and social complexity, both in terms of their causes and effects, and in terms of the potential solutions to them. Drawn from evidence that was largely inaccessible to the general public, these new environmental concerns emerged primarily as discursive constructions.<sup>14</sup>

Lastly, though perhaps most importantly, an alternative environmental discourse was becoming available: the discourse of Sustainable Development.

### *ii) The Rise of Sustainable Development (1970's to the present day)*

During the seventies, while public and media attention was focussed largely on the spectacle of mass demonstrations, a number of academic circles and expert organizations including the United Nations Environment Program, United Nations Economic Commission for Europe and the Organization for Economic Cooperation and Development had been setting up their own environmental directorates and committees. Through these directorates and committees, they had begun to gather evidence which suggested that the legalistic responses developed by governments under administrative

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<sup>14</sup> For further elaboration on the discursive construction of such new and increasingly complex environmental issues, see Maarten Hajer, The Politics of Environmental Discourse: Ecological Modernization and the Policy Process, (New York: Oxford University Press, 1995) pp. 13,14.

rationalism had been largely ineffective in addressing environmental concerns, and had thus served primarily to undermine the legitimacy of governmental policy itself. From their findings, these environmental directorates and committees set out to develop an alternative conceptual language that was capable of suggesting pragmatic ways of overcoming environmental problems and of delivering concrete solutions. Learning from the failures of administrative rationalism, they shifted their emphasis from coercive end-of-pipe regulatory instruments to the promotion of principles of precaution through the internalizing of environmental policies within industry,<sup>15</sup> and sought legitimacy for their new discourse not through access to elite scientific expertise, but rather through the inclusion in its development of such diverse perspectives as those of the International Union for the Conservation of Nature, the World Wildlife Fund, the Food and Agricultural Organization, thus bridging gaps between supra national organizations, quango's<sup>16</sup> and ngo's.

By shifting the attention of its policy from punishing regulatory measures to economic and fiscal instruments, the new discourse shifted perceptions of environmental policies from conflicting with to supporting economic interests, by equating sound environmental policy with sound economic policy through its promotion of continuing profitability at an acceptable rate of growth. It likewise recast pollution from its position under administrative rationalism as an unwanted by-product of industrial processes that required expensive treatment, to a measure of inefficiency within the

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<sup>15</sup> Once sound environmental policy is equated with sound economic policy, environmental issues arguably become a matter of industrial self-interest. The effectiveness of such internalizing, however, remains debatable. For criticism of the environmental initiatives of various Canadian industries see Judith McKenzie's Environmental Politics in Canada, (Don Mills: Oxford University Press, 2002), chapters 2-6.

<sup>16</sup> Quasi-autonomous non-governmental organizations, such as Friends of the Earth, English Nature and Scottish Natural Heritage to name a few.

economic model, the correction of which could thus open up further economic opportunities. Viewed in this new light, environmental policy, which had once appeared to oppose economic aims, was now itself seen as an instrument of economic renewal, and linked with economic policy as a mutually reinforcing concern.

By resisting a hierarchical bureaucratic organization and by drawing its legitimacy from more than scientific expertise alone, the new discourse was able to avoid the main pitfalls of administrative rationalism, while similarly avoiding any suggestion of structural change within the western capitalist democratic model. Being thus equally amenable to public concern, governmental politics and policy making, the new discourse soon produced a new consensus on how to conceptualize the environmental problem, its roots, and its solutions.

With the endorsement of the Brundtland Report, Our Common Future,<sup>17</sup> in 1987 the new discourse assumed a dominant position among environmental discourses, launching the expression ‘sustainable development’ into the global environmental lexicon, alongside the definition that it provided thereof: “to ensure that [development] meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>18</sup>

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<sup>17</sup> World Commission on Environment and Development, Our Common Future, (New York: Oxford University Press, 1987).

<sup>18</sup> World Commission on Environment and Development, p.43.

### *iii) A Critical Examination of Sustainable Development*

Sustainable development, demanding no significant structural change of the social or economic context in which it operates, and maintaining structured ways of seeing that are modern and technocratic in nature, is in essence a form of reflexive modernism that substitutes ‘sustainable development’ for the now tainted term ‘progress’ within the language of the modern project<sup>19</sup> as a self-evident value to be asserted without need for further proof or demonstration.<sup>20</sup>

The current broad appeal of this reflexive modernism is derived largely from the many ways in which it stands in sharp relief to the failed environmental approaches of the sixties and seventies. It presents a positive sum instead of zero sum approach to environmental problems by equating pollution with inefficiency and thus with business opportunity.<sup>21</sup> It avoids unsettling demands for structural change by ignoring basic social contradictions.<sup>22</sup> It supports a fundamental belief in the problem solving capacity of modern techniques and skills of social engineering, while carefully avoiding any association with progress and its negative connotations.<sup>23</sup> Finally, it draws upon and reinforces existing modernist policy instruments such as expert systems and science, but does not rely entirely upon them for legitimacy.<sup>24</sup>

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<sup>19</sup> A belief in progress through technological development and the application of rationality, that relies upon scientific legitimation.

<sup>20</sup> See Dryzek, page 123.

<sup>21</sup> See Tarla Rai Peterson, *Sharing the Earth: The Rhetoric of Sustainable Development*. (Columbia: University of South Carolina Press, 1997), page 17.

<sup>22</sup> See Peterson, page 24.

<sup>23</sup> See Peterson, page 22.

<sup>24</sup> See Peterson, pages 22-31.

When subjected to further scrutiny, however, certain contradictions obscured behind this broad appeal are readily exposed.

Although few would argue with the aim of sustainable development as defined in the Brundtland Report, the self-evident nature of the value of sustainable development that the report implies is difficult, if not impossible, to support.

Whether something is sustainable or not provides absolutely no indication of its value. Slavery based states and ruthless authoritarian regimes can be sustainable, but arguably should not be. Whether endless human misery is preferable to a few generations of unsustainable happiness is similarly debatable. The strand of the limits discourse that argues for the positioning of developed nations as sustainable ‘cultural lifeboats’<sup>25</sup> afloat in a sea of human despair advances a vision of the future that may well be sustainable, but that also raises disturbing ethical questions about the rights and obligations of individuals and communities that sustainability itself cannot answer. Clearly, before sustaining something, one must demonstrate that it is, in fact, worth sustaining. Sustainability necessarily demands justification in terms outside of its own.

‘Development’ is at least if not more difficult to justify as being of inherent value. Proponents of sustainable development at an international level are quick, for obvious political reasons, to affirm the right of developing nations to increase their own material well-being. It is no coincidence, then, that in their pairing the two are not presented as

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<sup>25</sup> See Garrit Hardin, “Living in a Lifeboat.”

co-equal terms. Rather, 'development' remains the key trope to which 'sustainable' is applied as a modifier. Despite this emphasis, underlying all environmental discourse (with the exception, perhaps, of the Promethean discourse) is the fundamental belief that developing countries simply cannot follow the development path taken by currently developed countries without initiating an environmental apocalypse. Development must be tempered. It must be channelled in an appropriate direction, namely, in the pursuit of sustainability. If, however, sustainability is incapable of speaking of value, then it is also necessarily incapable of suggesting what that appropriate direction might be.

Building upon the discourse of sustainable development's prior success in aligning environmental and economic interests, attempts have been made in the rhetoric of the discourse to redress any perceived undue weighting favouring development with the assertion that economic development, social justice and enlightened environmental policy making are equally important and mutually reinforcing concerns. As comforting as this assertion may be, however, it ignores the simple fact that those states which currently enjoy the highest levels of economic development and social justice<sup>26</sup> also enjoy rates of consumption orders of magnitude higher than their developing neighbours, making them the greatest stress on global natural resources, and the worst polluters of all (and demonstrably more so if

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<sup>26</sup> As in much of the rhetoric of sustainable development, the term 'social justice' is used here loosely to refer to the eradication of poverty, and the upholding of human rights. Though the argument can be made that social justice (so defined) can be pursued nationally at the expense of social justice elsewhere, such an argument reinforces the perception of international economic, environmental and social justice concerns as competing rather than mutually supporting concerns.

internationally displaced pollution is accounted for). The most socially progressive<sup>27</sup> and economically developed nations are thus, by definition, the most environmentally damaging and least sustainable societies of all. If, as this significant contradiction would seem to suggest, social justice, development and the environment are not, in fact, inherently reinforcing, then instruments are necessarily required with which to determine and secure an appropriate weighting of each. If unchecked development leads to environmental disaster, the significance of these instruments cannot be overstated. Whether such instruments can be developed, applied and justified within the existing discourse, however, remains to be seen. When faced with questions of value that resist quantification in economic or physical, environmental terms, the discourse is at best confused, more often, silent.

It is hardly surprising then, that other values that resist quantification are currently seeking shelter beneath the broad umbrella of sustainable development through similar assertions often made, ironically, in order to resist the looming pressures of sustainable development itself. UNESCO's recent and rather unusual claim (made, again, without proof or demonstration thereof) that "cultural diversity is as necessary for humankind as biodiversity is for nature"<sup>28</sup> is clearly one such attempt to draw upon the rhetoric of sustainable development in order to mend an opening rift between economic, environmental and cultural values. The usefulness of this assertion, however, in negotiating the complex questions raised by competing (and even contradictory) sets of values is doubtful at best. It seems unlikely that the

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<sup>27</sup> As in much of the rhetoric of sustainable development, the term 'socially progressive society' is used here loosely to refer to participatory democracies in which individual rights are guaranteed, and in which states advocate racial and religious tolerance.

<sup>28</sup> UNESCO, Universal Declaration on Cultural Diversity, Article 1, 2005.

authors of this assertion would gladly accept the monolithic homogenization of world culture if their rather tenuous argument were ever disproved.

With its assertions of justification so dismantled, sustainable development becomes subject to the very criticisms of the modern project that placed previous notions of progress in disrepute. Once reduced to the application of scientific objectivity to address its own undesired (environmental) ends, sustainable development can be seen to maintain a preference for scientific objectivity in thought and an attendant preference for the immediately practical over the qualitatively preferable, and to present technology as a neutral and transparent vehicle.

For its part, architecture has chosen to enter the discourse of sustainable development largely on such terms, by concerning itself primarily with the application of technological systems to symptoms of the imbalance. Critical analysis of its efforts in this regard are thus required.

## *Sustainable Development as a Prescriptive Architectural Approach*

That most sustainable development design approaches currently concern themselves with addressing the quantifiable negative results of the imbalance between the human and the non-human is easily demonstrated. In projects that range widely in scale and location from Martin Liefhebber's Healthy House in Toronto<sup>29</sup> to Ken Yeang's skyscraper developments in southeast Asia<sup>30</sup>, a shared design methodology is readily recognizable. In such projects, both setting and proposed development are typically divided into a number of measurable aspects (in order to be comparable), and a tally of pre and post development levels of those aspects is undertaken in order to gauge the relative success or failure of the design proposal. Aspects considered typically include (among many others) such things as surface water run-off volumes, floor area to footprint ratios, amounts of waste generated, and amounts of resources and energy consumed. In simplified form, these approaches position each setting and development as the subject of an objective scientific line of inquiry, and, through the internal logic of that line of inquiry identify quantifiable problems and develop appropriate measurable responses to them.

As such, they can be recognized as prescriptive approaches, in that they seek to develop means to specific prescribed ends. Unsustainable designs are thus identified as having failed to apply the logic of the objective scientific line of

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<sup>29</sup> See Bronwen Ledger's "A Healthy House," *Canadian Architect*, vol. 42, no. 2, February 1997, pp.29,30. It is perhaps worth noting that in 1998 Healthy House was considered significant enough to be featured on a Canadian postage stamp.

<sup>30</sup> For more on Ken Yeang's designs see Robert Powell's *Rethinking the Skyscraper: The Complete Architecture of Ken Yeang*, (New York: Watson-Guption Publications, 1999).

inquiry correctly, or as having failed to identify the true scope of concerns to which the line of inquiry applies.<sup>31</sup> With this recognition, however, a number of disturbing questions arise.

As means to ends, prescriptive solutions are afforded value proportionate to their ability to produce and their efficiency in producing desired results. This assignation of value on the basis of performativity, however, is necessarily problematic, as it demands the similar evaluation of any result as the means to further ends, initiating an endless chain of value deferral. The minimizing of a building's footprint, for example, may be justifiable in terms of maintaining the biodiversity of a region, but then the maintenance of biodiversity demands further justification on similar objective grounds. Any prescriptive response to a symptom of the environmental imbalance thus necessarily defers its value to the ultimate question of environmental performativity; 'for what ends is the environment to be saved?'

As tempting as it may seem to argue for environmental preservation as a matter of self-preservation, to do so would only require further justification of a concern for the circumstances of future generations, and would fail to support the preservation of those aspects of the environment that are not necessarily matters of humanity's ultimate survival, such

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<sup>31</sup> The depletion of the ozone layer, for example, can be understood as the result of an incomplete scope of consideration: a failure to connect CFC's and HFC's with ozone layer depletion, and subsequently, with increased exposure of the earth to undesirable wavelengths of light. Similarly, earlier buildings raised under the banner of sustainable development that concerned themselves primarily with the development and implementation of energy efficient mechanical systems and envelopes are understood today as having failed to recognize and address a variety of concerns, from the embodied energy content of their components, and the implications of their siting for the biodiversity of regions, to (more recently) the ease with which they could, at some future date, be dismantled for reuse elsewhere. In both cases, the environmental shortcomings of previous approaches are addressed by applying an objective line of scientific enquiry to a broader range of issues, thus allowing future environmental problems and remedies to be constructed in the same manner.

as the extinction of endangered species, the logging of old growth forests, and the degradation of unique ecosystems. Similarly, a concern with self-preservation also fails to challenge the promise once held by some that a polluted and inhospitable earth could, in the future, be abandoned in favour of distant planet colonies.<sup>32</sup> As Jean-Francois Lyotard has noted, in the performative valuation of scientific practices one is ultimately faced with the final question of performative legitimation: “what is your ‘what is it worth?’ worth?”<sup>33</sup>

The application of prescriptive solutions to symptoms of the imbalance is equally troubling in that it reinforces current prevalent and misleading perceptions of technology as a neutral and transparent means of agency. Examined cursorily, technology appears to manifest itself in two forms: technology as object (a device, apparatus, or even abstract system), and technology as activity (the design, construction and application of the device, apparatus or system). As an object, technology appears neutral (things being of themselves neither good nor bad) and as means to a prescribed end (as either object or activity), technology appears transparent.

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<sup>32</sup> In the introduction to the first and second editions of Theory and Design in the First Machine Age, (New York: Praeger, 1960, 1967), p. 9, Reyner Banham writes of the “possibility of making our planet inhospitable...” that “is balanced, as we stand at the threshold of space, by the growing possibility of quitting our island earth and letting down roots elsewhere.” It is perhaps telling that in the revised introduction that accompanies printings of the book from the first MIT Press paperback edition in 1980 onwards, Banham refers to his original introduction’s mention of “the dangers of those Machine Age enthusiasms, ... of the possibility of ‘making our planet uninhabitable...’” (Cambridge: The MIT Press, 1980) p.10 and yet fails to mention the Second Machine Age enthusiasm that he expressed alongside it.

<sup>33</sup> Jean-Francois Lyotard, The Postmodern Condition: A Report on Knowledge, (Minneapolis: University of Minnesota Press, 1984) p.35.

As Aidan Davison has argued in Technology and the Contested Meanings of Sustainability, however, this instrumental perception of technology<sup>34</sup> so dominates our current perceptual field that we are inclined to accept it as the entire picture, divorcing technology “from the essence of human knowing and experience,”<sup>35</sup> and subsequently disregarding the ways in which “technology is constitutive of our experience and thereby has substantive social character in its own right.”<sup>36</sup> Considered in its entirety, so simple a device as a table is seen to have broader social implications, introducing, alongside a new way of working or eating, a new form of social ordering through the seating arrangement at the table that it demands.<sup>37</sup> Similarly, in focusing solely on technological responses to symptoms of the imbalance, current environmental design practices typically fail “to investigate how technologies, woven as they are within the fabric of our practices, *express, shape and perpetuate* our philosophical commitments.”<sup>38</sup>

This appearance of neutrality and transparency is further reinforced by the previously discussed quest for increased performativity that drives technological innovation forward; a desire for “ends unencumbered by means.”<sup>39</sup> Attendant increases in the ease and efficiency of technological solutions draw to the foreground the results of their application,

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<sup>34</sup> See Aidan Davison, Technology and the Contested Meanings of Sustainability, (New York: State University of New York Press, 2001), p.24

<sup>35</sup> Davison, p.96.

<sup>36</sup> Davison, p.96.

<sup>37</sup> For further examples of the broader implications of relatively simple technological developments see Marshall McLuhan, Counterblast, (Toronto: McLelland and Stewart, 1969), p.72.

<sup>38</sup> Davison, p.94.

<sup>39</sup> Davison, p.110.

while causing the means to further “withdraw from our immediate bodily experience.”<sup>40</sup> The resulting dissociation of means from ends portrays technology as a vehicle of human agency, and obscures its true position as the very “essence of human agency,”<sup>41</sup> effectively removing it from the realm of moral considerations. As Davison notes, when faced with this distortion we fail to recognize that technology “is as ambivalent, as unpredictable, as honourable and as depraved as are human agents themselves.”<sup>42</sup>

As such, architectural responses that simply apply technological solutions to the symptoms of an environmental imbalance are at best questionable, and at worst, counter-productive. Seeking to redress the environmental imbalance through a revision of the scope of application of the existing conceptual framework that produced it, such responses reinforce perceptions of technology as neutral and transparent while ignoring issues of moral orientation. In this capacity they are reduced to innovations that serve primarily to maintain existing technosystems, in some cases even becoming forms of ‘reverse adaptation’ wherein human ends are adjusted to suit resulting available means.

Attempts to move past considerations of the scope of application in order to question the generating framework itself are generally dismissed on one of two grounds. In the first case, technological ‘progress,’ presented in its guise of neutrality and transparency, is positioned as the subject of autonomous human control, and is thus upheld as serving our

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<sup>40</sup> Davison, p.110.

<sup>41</sup> Davison, p.101.

<sup>42</sup> Davison, p.101.

true desires, despite any assertion made to the contrary. In the second case, technological 'progress' is presented as the inevitable outcome of a form of technological evolution (in the true Darwinian sense) that, although created by humans, remains somehow beyond our direct control. Both cases echo the ontological shift predicted by Lyotard, as the question "how shall I act?" replaces the question "how should I think?"<sup>43</sup> Removed from any consideration is the fundamental understanding that in developing, shaping and applying our tools, our tools and applications simultaneously develop and shape our own perceptions.

In considering the significance of this reciprocal nature of tools (and thus technology) to architecture and, more specifically, to architectural responses to the imbalance between the 'human' and the 'non-human,' we are assisted by the writings of American philosopher and environmental ethicist, Justus Buchler.

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<sup>43</sup> Lyotard, p.72.

## *Beyond Means and Ends:*

### *The Exhibitve and Active Judgements of Tools*

In Towards a General Theory of Human Judgment, Buchler contends that humans assume their stances in the world through the judgments they make, as they deem various ideas, actions and objects to be either important or trivial or irrelevant. Such judgments, he argues, necessarily assume one or more of three basic forms; assertive judgments, which are consciously formulated and articulated through writing and speech; active judgments, which mark the translation of assertive judgments to the physical world; and exhibitve judgments, which are inherently interpretive in nature and serve to reveal something more than or contradictory to those judgments expressed assertively and/or actively.

A tool (or technology) can be seen to embody all three forms of judgment simultaneously. As a specific means to a prescribed end, a tool is an assertive judgment. In making manifest the prescribed end, a tool becomes an active judgment. Most significant to the purposes of this thesis, however, in necessarily embodying unconscious (or conscious but unstated) evaluations of what is considered worth doing, and how what is worth doing should be done, a tool is also a form of exhibitve judgment.<sup>44</sup> As such, through a critique of exhibitve judgment, it may be possible to articulate the more immediate assertive and active judgments of a specific tool or technology by “putting it in touch with objects,

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<sup>44</sup> A hydroelectric dam, for example, is borne of and makes manifest the judgement that electricity is worth producing. Through its impact on surrounding ecosystems, however, such a dam also embodies judgements about the value of those ecosystems affected by the dam relative to the value of the electricity generated by the dam.

ideas or relations that were not initially part of the judgment,”<sup>45</sup> and thus revealing “more about the judgment by indicating new relations and possibilities inherent in it.”<sup>46</sup>

It is through the embodiment of these three forms of judgment that the informing nature of tools arises. In developing any tool “certain potentialities of doing, making and saying and certain potential relations to other things are excluded from (the maker’s or user’s) future, while others are included in it.”<sup>47</sup> In short, the implications of tools in determining trajectories of judgment may well be of greater significance than the utilitarian terms on which they are routinely evaluated. Furthermore, this conception of tools challenges current perceptions of the neutrality of technology by suggesting that the notion of self (or of community) cannot be specified in a fixed state, but rather must be seen instead as a dynamic and changeable construct that may even ultimately remain indeterminate or incomplete. If this conception is correct, then arguments for our autonomy over technology or for the inevitability of technological determinism become untenable.

With respect to the design of the built environment, this realization is particularly instructive. If architecture chooses to enter the discourse of sustainable development by concerning itself primarily with the application of technological systems to the symptoms of the environmental imbalance (setting aside, for the moment, the ultimate legitimation of

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<sup>45</sup> Justus Buchler, Toward a General Theory of Human Judgement, (New York: Dover Publications, 1979), p.95.

<sup>46</sup> Buchler, p.95.

<sup>47</sup> Justus Buchler, Nature and Judgement, (New York: Grosset and Dunlap, 1955), p.114.

their application as noted previously), then architects, in choosing not to explore the engagement of designers, constructors and users with the ‘non-human’ on any other level, necessarily and effectively evaluate such engagements as merely trivial, if not entirely irrelevant.

Viewed in this light, such things as the area limits prescribed by the R2000 program for different orientations of glazing, though routinely characterized as ‘environmentally responsible,’ assume a more sinister nature as they dismiss blindly any number of other possibilities of engaging building, occupant and site.

This is not to suggest, however, that tools, as means to ends, must necessarily embody judgements that trivialize our relationship with that which we engage through their use. To the contrary, by exploring the informing nature of tools as we employ them to perform prescribed tasks, it may be possible to challenge and alter the potentialities that we currently open and close to ourselves, and, in so doing, to explore the nature of our current understandings, and suggest the possibility of new understandings.<sup>48</sup>

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<sup>48</sup> Consider, in contrast to the glazing area limits restrictions of the R2000 program, the Frankfurt Daycare Center designed by William McDonough Architects, in Charlottesville, Virginia. In addressing the solar heat gain and energy loss concerns of this building (a typical ‘means and ends’ proposition) the architects resisted the engineering consultants’ repeated requests for a completely automated building envelope, and decided instead upon a system of shades and ventilating windows to be operated manually by the facility’s children and staff. In addition to its increased thermal performance, the building has subsequently attuned its occupants to the daily and seasonal variations of their time and place through rituals of opening and closing those systems. Such engagement would clearly have been unimaginable in an hermetically sealed, evenly conditioned or automated environment. For further description of this, see William McDonough’s “Centennial Sermon on the 100<sup>th</sup> Anniversary of the Cathedra of St. John the Divine,” (New York, 1993).

To limit one's consideration in this matter to the components and physical systems of buildings alone, however, would be short sighted. Though the current rhetoric of sustainable development in architectural discourse focuses largely on technological innovations in building components and systems, the built environment, at all of its scales, from inoperable window pane to city plan, is replete with exhibitiv judgments. Arguably more than any other artefact, the built environment marks the stance of the 'human' relative to the 'non-human' as decisions are made in favour of rearranging and engaging with certain objects and forces in certain ways, while all other possible arrangements are rejected. In Buchler's words, "Nature refashioned is nature interpreted. Every product is a judgment."<sup>49</sup> Scrutiny of those judgments made beyond such (more readily discerned) concerns as the establishment of appropriate quantifiable performance criteria must thus be undertaken.<sup>50</sup>

The implications of tools and of their applications are likewise not limited to the means by which architectural artefacts are made manifest, but rather extend to include the very means by which different architectures are conceived, developed and represented.<sup>51</sup> Methods of representing space and materials, of site analysis and of programming are as

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<sup>49</sup> Justus Buchler, Towards a General Theory of Human Judgement, p.47.

<sup>50</sup> In Martin Liefhebber's previously mentioned Healthy House in Toronto (a project much lauded for its land use, its water, sewage and energy management strategies, and for its careful selection of construction materials) a decision was made to occupy a significant portion of the house's ground floor with those systems for which it is now renowned. The implications of this decision, in reducing the possibility of engagement between occupant and site on the very plane at which it would have most readily occurred, has yet to be seriously questioned, or even considered.

<sup>51</sup> The Cartesian grid, for example, forms the foundation of those drafting conventions that currently result in the vast majority of working documents produced today. This is undoubtedly the result of its usefulness in describing relative spatial locations. However, as Max

much tools with preconditions and limitations as are the buildings and cities that result from their application. Their significance in this regard, however, is often casually dismissed in the rhetoric of architecture that advances the notion of the architect's autonomy over design. The now legendary story of Frank Lloyd Wright's having drawn, in a mere two hours, a complete set of plans, sections and elevations of Fallingwater without ever having previously set pencil to paper on the project is thus typically related<sup>52</sup> in a manner comparable to Athena having sprung fully formed from the forehead of Zeus. In Wright's own words, he trained himself to "conceive the building in the imagination, not on paper but in the mind, thoroughly- before touching paper.... When the thing lives for you- start to plan it with tools. Not before."<sup>53</sup> As heroic as this statement may be (and as remarkable as the conception of Fallingwater is), it ignores the fact that Fallingwater bears indelibly in its conception the marks of the tools of plan, section and elevation through which it would later be communicated.

Similarly, the current fascination in architectural publications with the presentation of sustainable development projects through building sections filled with arrows indicating changing ventilation patterns and sun angles reveals (and

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Oelschlaeger has argued in The Idea of Wilderness, (New Haven: Yale University Press, 1991), pp. 80-96, the Cartesian grid, as an intellectual device during the Enlightenment, encouraged the intellectual appropriation of space, and thus reinforced the Cartesian separation of mind from all else, that, in turn, supported the conceptual reduction of the 'non-human' to little more than a complex machine, of which God was positioned as the divine artisan. As noted in the thesis body, the intention here is not to suggest that use of the Cartesian grid necessarily encourages environmental exploitation, but is rather to acknowledge the influence this fundamental way of conceiving space continues to exert upon the way projects are conceived and constructed, and to question whether alternate methods of conceiving space and developing/transcribing design intentions might open currently closed opportunities of engagement with the non-human.

<sup>52</sup> See Edgar Kaufmann Jr., Fallingwater: A Frank Lloyd Wright Country House, (New York: Abbeville Press, 1986), pp. 39, 40, and Robert McCarter, Frank Lloyd Wright, (London: Phaidon Press, 1997), p.206.

<sup>53</sup> Frank Lloyd Wright, In the Cause of Architecture, ed. F.Gutheim, (New York: McGraw-Hill, 1975), p.153.

encourages) the perception of architecture as an environmental device, a “living machine for a new age that recognizes that we must build in compatibility with natural systems.”<sup>54</sup> Under this perception, the ‘non-human’ is reduced accordingly to a set of physical resources to be exploited efficiently in order to ensure that equally comfortable physical environments can be constructed for future generations.

A gradual shift in the textual descriptions accompanying the publications of these projects is equally disturbing, as strategies of natural lighting and ventilation characterized in earlier projects as taking “advantage of natural air currents and sunlight”<sup>55</sup> or as “letting in cool summer breezes”<sup>56</sup> are increasingly recast in later projects in the consumptive terms of “harvesting sunlight”<sup>57</sup> and “harnessing existing ventilation patterns.”<sup>58</sup> The justification offered for these strategies similarly shifts, as the provision of better working environments is recast in later articles in the performative terms of ensuring “reduced sick time,”<sup>59</sup> and the attendant (though unstated) implication of increased workplace productivity and hence profitability.

Arguably as significant for the purposes of this thesis, however, as any such biases which might be uncovered by analyzing a given way of developing and/or representing a project, is the likelihood that alternate methods of

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<sup>54</sup> Bronwen Ledger, “A Healthy House,” The Canadian Architect, (February 1997), p.29. This description was offered of Martin Liefhebber’s Healthy House in Toronto of the same year.

<sup>55</sup> “Natural Harmony,” The Canadian Architect, (July 1996), p.14.

<sup>56</sup> “Natural Harmony,” p.14.

<sup>57</sup> Ray Cole, “Closing the Gap,” The Canadian Architect, (January 2005), p.12.

<sup>58</sup> Ray Cole, p.12.

<sup>59</sup> Peter Busby, “Building Kyoto,” The Canadian Architect, (July 2002), pp.18,19.

conceiving the built environment and of developing and transcribing design intentions exist which may open up currently closed, unimaginable opportunities of engaging with the 'non-human.'<sup>60</sup>

As irresistible as the utility of the Cartesian grid and the current inertia of its widespread application in working drawings may currently seem, with recognition of its influence opportunities for resistance necessarily arise.

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<sup>60</sup> Consider, for example, Carmen Corneil's design for the McMullen house on Lake Kashagawigamog, Ontario, where standard construction panels were physically laid over complex terrain to generate a plan which was only later translated to conventional construction documents: see James P. Deene, "Ontario Organic," *Architectural Review*, (May 1994, vol. 194, no.1167), pp 55-57. Consider also the emergence of those electronic modeling tools that are currently shifting potentialities of conceiving and making, by encouraging the development of projects that cannot be described adequately through such familiar devices as plans, sections, and elevations, and that thus resist intellectual appropriation as abstract spatial models. For more on this see Douglas MacLeod "Gehry's Choice," *The Canadian Architect*, (July 1993), pp.27-30, Annette LeCuyer, "Building Bilbao," *The Architectural Review*, (December 1997), pp.43-45, Andrew Cocke, "The Business of Complex Curves," *Architecture*, (December 2000), pp.54,124, and Stephen Pacey, "Pure Disney," *RIBA Journal*, (November 2003), pp.78,79.

## *The Limitations of Critical Analysis and the Broader Potential of Discourse*

By thus exposing, through critical analysis, the contradictions inherent in architecture's various forays under the banner of sustainability into the realm of rational objectivity, it is possible to dismantle the central claims to legitimation of sustainable development, and to dispel the various justifications routinely advanced on its behalf.

With its contradictions exposed and its legitimacy undermined, the temptation arises to dismiss sustainable development (architecturally and otherwise) as fatally flawed, and to return, instead, to the demands for structural change and attempts to extricate ourselves from existing frameworks that were all but abandoned in the late seventies.<sup>61</sup>

To do so, however, would be to exhibit the same failings for which sustainable development has just been criticized above.

Critical analysis has been used throughout this thesis in the exploration and development of the ideas expressed so far. Given the usefulness of critical analysis in evaluating arguments by exposing contradictions and inconsistencies within them, this is hardly unexpected or surprising. With our modern enframing (in the Heideggerian sense), however, we often lose sight of the fact that critical analysis, like other such apparently rational and transparent instruments as economics and development, is a technology that exhibits its own biases by encouraging certain potentialities of doing, seeing and making, while discouraging others.

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<sup>61</sup> See page 15.

For its justification, critical analysis, like sustainable development, also relies upon certain ‘self-evident’ concepts whose intrinsic value it asserts, and requires no further demonstration thereof. The ability, however, of such things as logic and rationality to speak of value and to thus suggest what is worth doing or how one should think is clearly as questionable as that of either sustainability or development as previously outlined.<sup>62</sup>

The critical analysis of sustainable development undertaken in this thesis so far has considered only those parts of the discourse that are amenable to my purposes in developing and evaluating a textual argument, namely key books, articles, quotations, declarations and conventions. Sustainable development, however, is not simply a theoretical argument developed through rhetoric alone. Viewed more broadly as a discourse, it is a “specific ensemble of ideas, concepts and categorizations that are produced, reproduced and transformed in a particular set of practices through which meaning is given to physical and social realities.”<sup>63</sup> In considering this broader notion of discourse we are assisted by the writing of American linguist and discourse analyst, James Gee.

Beyond the notion of discourse as ‘language in use’ or ‘rhetorical strategy,’ James Gee advances the notion of Discourses (capitalized for distinction) as “ways of behaving, interacting, valuing, thinking, believing, speaking and

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<sup>62</sup> Consider, for example, the ethical implications of such recent technological developments as Nexia’s Biosteel- a fibre developed for the manufacture of flak jackets that is produced from the milk of goats implanted with spider genes.

<sup>63</sup> Maarten Hajer, p.44.

often reading and writing that are accepted as instantiations of particular roles (or ‘types of people’) by specific groups of people.”<sup>64</sup> Such Discourses, Gee contends:

are always embedded in a medley of social institutions, and involve various ‘props’ like books and magazines of various sorts, laboratories, classrooms, buildings of various sorts, various technologies and a myriad of other objects....Think of all the words, symbols, deeds, objects, clothes and tools you need to coordinate in the right way at the right time and place to “pull off” (or recognize someone else as) being a cutting-edge particle physicist or a Los Angeles Latino street gang member or a sensitive high-culture humanist (of old)...<sup>65</sup>

Viewed as such, architectural Discourse is not limited to texts and rhetoric, but rather extends to the influence that architecture in its many aspects (as theory, physical artefact, and organizational device but to name a few) exerts over and suffers through the ways in which we apprehend and make sense of our world. Similarly, architecture’s engagement with environmental issues is not limited to the textual discourse of architectural engagement with environmental issues (which, this thesis argues, is typically and mistakenly assumed to be the entire case) but rather assumes the expanded form of what Gee has termed ‘Conversations among Discourses.’ As Gee explains:

...the word ‘conversation’... can be misleading. We tend to think of conversations as ‘just words.’ But the sorts of conversations I am talking about involve a lot more than words; they involve, in fact, Discourses. It is better, perhaps, to call them “Conversations” with a “big C,” since they are better viewed as (historic) conversations between and among Discourses, not just among individual people. Think, for example,... of the long running

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<sup>64</sup> James Gee, Social Linguistics and Literacies, (New York: Falmer Press, 1990), p.viii.

<sup>65</sup> James Gee, An Introduction to Discourse Analysis, (New York: Routledge Press, 1999), p.18.

historic Conversation between biology and creationism, or between the Los Angeles police department and Latino Street gangs.<sup>66</sup>

As architecture is arguably one of the chief physical means by which we negotiate relationships between (and thus conceptions of) the built/human and non-built/non-human spheres, the role of architecture in environmental discourse when regarded in light of Gee's notion of Conversations extends beyond the application of technological solutions to quantifiable environmental problems, to the very shaping of our conception of the environment and thus of environmental problems and appropriate remedies. Its affinity, in this regard, with Buchler's argument concerning the influence of assertive, active and exhibitive judgements in encouraging certain potentialities while discouraging others is remarkable.<sup>67</sup>

When combined, however, with the theory of discourse coalitions and 'story-lines' developed by Maarten Hajer in his analysis of the environmental discourse surrounding acid rain,<sup>68</sup> the significance of Gee's notion of Discourse for architecture and its engagement with environmental issues is greater still.

Noting that common stances on specific environmental issues are typically held by collections of individuals and groups that have vague, contradictory and unstable value positions, and that make and undertake confusing and

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<sup>66</sup> James Gee, An Introduction to Discourse Analysis, p.35.

<sup>67</sup> See page 31.

<sup>68</sup> For further elaboration of this topic, see Maarten Hajer, The Politics of Environmental Discourse, (New York: Clarendon Press, 1995).

sometimes even contradictory statements and practices, Hajer convincingly argues that such stances are more properly regarded not as single discourses but rather as sites of discourse coalitions. These discourse coalitions, he contends, are held together not in spite of, but by virtue of a number of rather vague story-lines- narratives on material and social reality through which elements from many domains can be combined, providing actors with a set of symbolic references that suggest a common understanding, and the potential for discursive closure necessary in order to initiate action.

If understood in this way, as a broader discourse than the textual concerns of critical analysis, the perception of 'sustainable development' as a rational approach based upon stable values recedes from view, and the perception of the discourse for which it is commonly criticized emerges: sets of confusing and sometimes contradictory statements made and practices undertaken by various actors and groups who themselves hold vague, contradictory and unstable value positions. It is arguably in this regard, however, that sustainable development offers its greatest potential, for although the notion of discourse coalitions surrounding story-lines may be applicable to any number of situations, it is of particular use when applied to environmental issues in a post-modern context.

As the scientific, social, political and economic complexity of the environmental concerns we face increases, our ability to grasp them is increasingly fragmented among ever growing numbers of areas of expertise. With the demise of the grand narratives in the post modern age, our ability to move forward through judgement is equally confounded by our

increasing awareness of values as socially constructed, contingent, multivalent, changing, and even conflicting. In the face of such fragmentation, the shallow and ambiguous narratives of story-lines provide the discursive cement required to create communicative networks among actors with different or at best overlapping perceptions and understandings by suggesting unity in the bewildering variety of separate component parts of the problem faced. Those aspects of such story-lines that are subject to critical analysis (the logic of its arrangement of parts, the detail of its argument) become thus less significant than their discursive affinities- those separate elements that, through similar cognitive structure, suggest they belong together. In this manner, the Brundtland Report's definition of sustainable development, though so ambiguous as to necessarily frustrate any practical application, retains a genuine appeal.

Through the suggestion (architecturally and otherwise) of new narratives and discursive affinities within discourse coalitions, it may thus be possible to alter existing cognitive commitments, and, in so doing, to influence the values and beliefs of actors, opening up possibilities for change and for new potential roles. The development of new discursive affinities thus becomes an important form of agency, suggesting possibilities for architecture within the discourse of sustainable development that surpass its current and limited concern with reducing the quantifiable impacts of buildings upon their settings by refining existing technosystems, a concern that serves largely to prolong the modern project<sup>69</sup> while reinforcing the separation of humankind from nature, promoting the quantitative over the qualitative, and denying the agency of technology.

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<sup>69</sup> See page 19.

The primary importance of architecture in engaging environmental issues, therefore, does not lie in its current efforts to minimize our environmental footprint. Perhaps, as Lyotard argued of all concerns regarding legitimation in the postmodern age, what is required in place of our search for a fixed single environmental solution is differential, imaginative and paralogical activity that points out our presuppositions, summons us to propose alternatives, and that ultimately finds its own legitimation in the ideas and/or new statements that it generates.

Nothing is better suited to this task than architecture.

Through architecture as combined assertive, active and exhibitiv judgement, past and current understandings of the relationship between the 'human' and the 'non-human' can be articulated and explored for new relations and possibilities inherent within them. Through this exploration, new potentialities of doing, saying and making can be encouraged that both reveal and challenge the trajectories we have built into the decisions we make today through the decisions we have made in the past.

By challenging our current tacit assumptions about architectural environmental discourse with the conception of architecture as Discourse in Conversation with environmental Discourses, we can begin to question and understand the multitude of ways in which we apprehend the environment and thus construct environmental problems and appropriate solutions.

Lastly, by conceiving of sustainable development as a site of discourse coalitions, we can begin to explore architecture's unique ability, through the suggestion of narratives and discursive affinities, to facilitate the negotiation of the contested understandings of our own values, and of what may be deemed appropriate forms of engagement with the non-human.

As the perceived powerlessness of the individual in the face of increasingly global environmental problems grows, architecture thus offers a form of agency at the most immediate of levels. As with any mention of agency, however, we are returned once again to face the question of legitimation.

## *Environmental Ethics and Appropriate Directions*

Though the above may indicate the usefulness (if not, in fact, the necessity) of architecture in formulating and addressing environmental questions that systems based in rational objectivity<sup>70</sup> cannot possibly speak to, it offers no useful guidance in the determination of appropriate action, either in terms of negotiating between competing values of fundamentally different types (such as quantitative and qualitative values) or between competing values of similar types. In part, this is understandable as the result of the refutation of prescriptive methods required to break the chains of means and ends value deferrals outlined earlier.

In part, this is also a result of the fact that, as our capacity to engage with and alter the non-human has increased at an accelerating rate, the ethical framework that directs us in our engagement with the non-human has been slowly dismantled until we are left with the sole environmental assertion that has remained constant throughout the history of western Judaeo-Christian culture: that no moral considerations bear upon our relationships to the non-human, except inasmuch as such actions may have secondary effects upon other humans.<sup>71</sup>

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<sup>70</sup> Consider, for example, environmental sciences, economics or even critical analysis itself.

<sup>71</sup> This argument is perhaps most clearly demonstrated in John Passmore's "Attitudes to Nature," *Environmental Ethics*, (Oxford: Oxford University Press, 1995), pp.129-141, and in Max Oelschlaeger's *The Idea of Wilderness*. For supporting evidence of the influence of religion on cultural constructions of the environment during the renaissance, see Susannah Hagan, *Taking Shape: A New Contract between Architecture and Nature*, (Boston: Boston Architectural Press, 2001), pp.22-28. For supporting evidence of this trajectory in post-contact North America see Christine Macy and Sarah Bonnemaïson, *Architecture and Nature: Creating the American Landscape*, (New York: Routledge, 2003).

The perceived limitations of this current framework have given rise to a great deal of writing on environmental ethics, in which philosophers and ethicists have sought to develop arguments (among others) for Deep Ecology,<sup>72</sup> Social Ecology,<sup>73</sup> animal rights,<sup>74</sup> anti-speciesism,<sup>75</sup> eco-feminism,<sup>76</sup> and for the intrinsic value of the non-human outside of any human use value.<sup>77</sup> Some of these writers have even claimed to have transcended anthropocentrism in thought.<sup>78</sup>

The textual discourse of architecture, however, has generally shied away from any discussion of environmental ethics. This is likely due to the fact that most arguments so far proposed as the bases for new environmental ethics typically offer no way forward through architecture. Furthermore, many of the non-anthropocentric arguments so proposed can, with a slight shift in emphasis, be interpreted as anti-anthropocentric arguments and thus anti-architecture arguments.

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<sup>72</sup> See John Dryzek, pp.155-158.

<sup>73</sup> See Murray Bookchin, Remaking Society: Pathways to a Green Future, (Boston: South End Press, 1990).

<sup>74</sup> See Tom Regan, The Case for Animal Rights, (Berkeley: University of California Press, 1983).

<sup>75</sup> See James Rachels, "Morality Without the Idea that Humans are Special," Created From Animals, (Oxford: Oxford University Press, 1990), pp.336-342.

<sup>76</sup> See Connie Bullis, "Retalking Environmental Discourses from a Feminist Perspective: The Radical Potential of Ecofeminism," The Symbolic Earth: Discourse and the Environment, (Lexington: University Press of Kentucky, 1996) pp.123-148, and Karen Warren, "The Power and Promise of Ecological Feminism," Environmental Ethics, vol. 12, 1990, pp.125-146. Of all the arguments noted in this brief mention, Bullis' argument that a transformation of thinking is required that can only come from the development of a number of alternative discourses that are not grounded in the current dominant discourse is perhaps most aligned with this thesis' contentions. She also provides a useful and remarkable demonstration of the many ways in which Deep and Social Ecology support essentially modernist structured ways of seeing and thus perpetuate existing conceptual frameworks that have arguably facilitated the degradation of the environment against which they protest.

<sup>77</sup> See Freya Mathews, "Value in Nature, and Meaning in Life," The Ecological Self, (London: Routledge, 1991), pp.142-163.

<sup>78</sup> Perhaps most notorious for espousing this position is Dave Forman, founder of Earthfirst!, who is also alleged to have said that "Phasing out the human race will solve every problem on earth, social and environmental."

In the midst of these arguments, however, is an argument advanced by Anthony Weston, an American environmental philosopher, which suggests a significant role for architecture in the development of environmental ethics.

Having examined contemporary arguments for new environmental ethics and found them unsatisfactory, Weston shifted his consideration to the originary stages of past developments of those values currently entrenched in our society. Through his research, Weston discovered that at the early stages of the development of a new set of values “a great deal of exploration and metaphor is required, from which only later do the new ethical notions harden into analytic categories,”<sup>79</sup> and that “the process of co-evolving values and practices at originary stages is seldom a smooth process of progressively filling in and instantiating earlier outlines. Instead, we see a variety of fairly incompatible outlines coupled with a wide range of proto-practices.... all contributing to a kind of cultural working through of a new set of possibilities.”<sup>80</sup>

In a process akin to the development of scientific paradigms identified by Thomas Kuhn in The Structure of Scientific Revolutions, the working through of a new set of values appears seamless in retrospect only because the values that become entrenched write the history of their development in such a way as to make them appear more necessary and univocal than they actually were. Weston illustrates this contention by outlining the development of individual rights,

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<sup>79</sup> Anthony Weston, “Before Environmental Ethics,” Environmental Pragmatism, ed’s Andrew Light and Eric Katz, (New York: Routledge, 1996) p.147.

<sup>80</sup> Weston, p.148.

demonstrating that our current conception of human rights is not the result of the validation, application and acceptance of an abstract formulation, but is rather the result of an evolutionary process that, over time, encouraged the acceptance of new groups of individuals (slaves, serfs, women, children) as rights holders.

If we are at the originary stages of an environmental ethics (as the failures of our current recourse to means and ends justifications would seem to strongly suggest), and if we are to accept Weston's findings on the originary stages of values, then two conclusions must be drawn. First, we must realize that we can currently have only the barest sense of what a valid environmental ethics will eventually turn out to be. Secondly, we are currently at a stage where exploration and metaphor are crucial to the development.

In contrast to those arguments for environmental ethics that seek to close questions with answers, Weston's approach strives to open up possibilities, to widen current perspectives and establish new connections. In this regard, Weston's argument shares certain similarities with the arguments of Buchler, Gee and Hajer outlined previously, given its assertion of the usefulness of architecture in shaping how we apprehend and construct the 'non-human' and our relationship to it, and its usefulness in shattering the preconceptions that we currently hold.

As Weston has noted:

A central part of the challenge is to create the social, psychological and phenomenal preconditions- the conceptual, experiential or even quite literal “space”- for a new or stronger environmental values to evolve.... Consider the attempt to create actual physical spaces for the emergence of transhuman experiences, places within which some return to the experience of and immersion in natural settings is possible.<sup>81</sup>

The intention here is not to encourage encounters with nature as park, or pristine wilderness, but rather to “open up the possibility of reciprocity between humans and the rest of nature,”<sup>82</sup> and “to create a space for genuine encounter as part of our ongoing reconstruction of our own lives and practices.”<sup>83</sup> Again, no practice is better suited to this task than architecture.

How architecture can undertake this task cannot presently be known, and, if Weston is correct, architecture cannot currently produce a single correct answer. In this regard, his argument resonates remarkably with Lyotard’s suggestion, noted earlier, that perhaps what is currently required is differential, imaginative and paralogical activity that will ultimately find its own legitimation in the ideas and/or new statements that it generates.

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<sup>81</sup> Weston, p.152.

<sup>82</sup> Weston, p.153.

<sup>83</sup> Weston, p.155.

As a consequence of this similarity, however, architecture is still offered no guidance in the determination of appropriate action. In this regard, it is perhaps assisted by the argument advanced by American philosopher and ethicist Thomas E. Hill Jr. in his essay “Ideals of Human Excellence and Preserving Natural Environments.”<sup>84</sup>

Questioning the success of those attempts to direct human engagement with the environment in more ‘appropriate’ ways by reinforcing the environment’s value through such prescriptive approaches as the development of new rights or the articulation of its social utility, Hill considers, instead, the implications our actions have for our virtues. This simple shift in perspective, exemplified by replacing the question “why shouldn’t I?” with the question “what sort of person would want to?” moves the focus of the sustainable development debate from the justification of restrictions placed on economic or development pressures (weighed against the quantifiable benefits resulting from such pressures), to reflection on those human values that we would wish to encourage and develop. Recast in these terms, the simple question ‘what sort of individual, group or community would despoil its surroundings in favour of immediate economic development?’ assumes increasing, if somewhat ominous, importance.

Hill’s argument resonates well with the concern that unites sustainable development as a site of discourse coalition. By emphasising those values that we would wish to encourage and develop, his argument echoes the primary concern of all those who have engaged in architecture’s textual environmental discourse, but states clearly the fundamental

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<sup>84</sup> Thomas E. Hill Jr., “Ideals of Human Excellence and Preserving Natural Environments,” *Environmental Ethics*, vol.5, 1983, pp.211-224.

problem faced: the sustaining of those values that resist quantification in the face of competing quantifiable pressures that would dissolve them.

## ***Conclusion***

Architecture straddles both the imaginary and the real. Though capable of suggesting new ways in which we might inhabit the earth, it is ultimately realized through the reconciliation of these suggestions with the physical, social and environmental contexts in which it necessarily must locate itself.

The quantifiable environmental impacts of buildings are undoubtedly great, as any number of published articles have ably demonstrated. Of equal significance, however, is the capacity of buildings to challenge our preconceptions of what it means to exist in a certain place, and at a certain time. By reinforcing the quantifiable aspects of both buildings and the environment, however, a preponderance of recent architectural textual discourse would encourage us to accept the measurable aspects of things for the entirety of what is, and, perhaps more importantly, for what could be. It does so in part out of a genuine concern for humankind and for the multitude of remarkable things that currently exist on this planet. It also does so in part out of a desire to re-establish its own professional legitimacy in the eyes of the public. Its intentions in the former regard are commendable, but unwittingly restrict the exercise of architecture's true potential. Its intentions in the latter regard, though commendable as appeals to civic duty, necessarily endorse a strategy that, in the age of the demise of the grand narratives, is ultimately folly.

It is time for architecture as Discourse to engage in a multitude of Conversations with environmental Discourse, some jovial, some serious, some romantic, some pragmatic.

It is also time for architecture to conjure up new story-lines that suggest how we might live on a planet that increasingly seems to indicate that, because of our actions, we may well be wearing out our welcome.

The following is but one such possible story.....

## *An Architectural Conversation*

I remember the first time I heard about Diogenes, the wise old man who lived in a tub and raged against the follies of society with his words and his ascetic lifestyle.

I am less certain, however, as to when I first saw him in Ottawa. I have vague recollections... times when I thought I'd caught glimpses of him ... on Parliament Hill, on a sidewalk outside shops in the Glebe, walking along the canal....

In my memory the glimpses seem to precede the stories I've heard. Nonsense of course... My uncertainty likely stems from my inability to connect the stories that surround him to matters of historical fact which would locate him definitively in specific places at specific times... a frustration compounded by the fact that I seem increasingly unable to separate the stories I've heard and told about him from the man himself.

Someone once told me that Diogenes would, from time to time, masturbate in public, provoking reactions of shock and disgust from onlookers. If reproached for indecency, he would simply lament the fact that his hunger was not as easily satisfied by rubbing his stomach. A story like that is so crazy it has to be true....

It was a clear fall day when I finally raised enough courage to approach him. He was in his tub outside the Rideau Centre, provoking shoppers in a manner true to the tales.

I strode up and introduced myself, hoping to appear confident, but speaking far too quickly in my nervousness.

“Hi.... I'm a grad student working on my master's thesis in architecture. I've been studying environmental issues, environmental ethics and the role of architecture in both. I'd like to talk to you for a minute, if I may.”

He was picking his nose, clearly unimpressed. I stammered on before he could say no.

“As part of my thesis, I believe I should design a homeless shelter. I’ve heard of your wisdom, and thought you might be interested in discussing the connections between homelessness, the environment and architecture. Under your guidance, I’d like to explore the ways in which I, as an aspiring architect, could best assist you, a homeless person, in improving your current circumstances.”

“You could step out of my sun.”

I laughed uneasily, and continued on, determined to convey the amount of homework I’d done.

“Along with my research on environmental concerns, I’ve read articles and books on homelessness and shelter design, and I’ve looked at various shelter case studies. I believe now that I have a fair grasp on that material, on the designer’s side of the story, but I recognize that I need the homeless person’s side as well. What do you, as a wise homeless person, think a designer could do for you?”

“You could step out of my sun.”

Realizing that I was, in fact, in his light, I quickly stepped aside. With my offending shadow lifted, Diogenes resumed picking his nose. If intended as a rebuke, his words were dispassionate, a simple statement of fact. Embarrassed, I tried to steer the conversation past my lack of consideration.

“Sorry about that... it certainly is a sunny day. Funny how you don’t usually notice nice weather till someone else points it out.”

“I knew it was sunny before your shadow came along.”

I retreated hastily to my previous proposition.

“So... about my thesis. Are you interested? I realize it’s certainly an imposition on you, my talking to you, my asking you questions. But the end result won’t necessarily be so one-sided. Hopefully I’d be able to realize something that would improve your living conditions.”

“You have not come here out of concern for my welfare.”

The implications of this rebuke seemed somehow more immediate and were harder to ignore. I proceeded cautiously...

“I’ve already admitted that I’m here because of my thesis work.... that I believe my thesis will be improved through your involvement.... but surely my interest in my thesis and an interest in your welfare are not mutually exclusive. How else can you explain my offer of assistance?”

“You have come to see me because you are afraid of me.”

A feeling of dread yawned open inside me. I masked it with derision and scoffed at him.

“And exactly what do I have to fear from an old and destitute vagrant?”

He finished picking his nose, flicked the snot from his finger and spoke slowly.

“You say that you wish to understand my predicament in order to apply your skills in remedy. What you really want, however, is my assurance that I am in a predicament, and that I require your skills. I am not and I do not, and that frightens you.”

I laughed incredulously.

“If there is nothing I can do for you, then surely I am freed from any obligation to you, and our relationship dissolves to one of mutual in consequence. But I am not as wise as you, Diogenes. Please enlighten me. How can the inconsequential inspire fear?”

“Your own words betray you. You mention the consequences of actions, and ignore the fact that there are consequences for actions. You say you wish to discuss environmental issues, and you suggest realizing something architectural to improve my lot in life, yet you already know the lightness of my environmental footprint, that I stand at the baseline of subsistence, consuming just enough to survive. I enter your discussions of embodied energies, minimized impacts, and efficient envelopes as a harbinger of the death of architecture. In this regard you are right to be afraid.”

My initial surprise turned quickly to indignation.

“Your words are both disappointing and disingenuous. Perhaps you can afford the bravado of your baseline existence given the currency of your intellect, but what of those homeless people who truly are the most vulnerable members of our society? Am I to suppose that architecture is inconsequential to them as well, and abandon them to a form of ‘survival of the wisest’ that favours your chances right out of the gate?”

A sharp pain buckled my left knee, causing me to gasp and sag forward into a second blow that cut my right cheek. As I tumbled to the pavement, Diogenes rose from of his tub and stood over me, walking stick in hand, his voice trembling with anger.

“You accuse me of being disingenuous while you wrap yourself in moral vanity and masquerade your pity as empathy. If you’ve done the research you claim then there are certain things that you should know but feign ignorance of, either because you are a fool, or because you have mistaken me for one.

You have doubtless heard the argument that shelters are self-propagating, that they institutionalize homelessness by shifting attention from root causes to symptoms... that, in salving the public’s conscience, they frustrate the development and implementation of other initiatives.

You are also doubtless aware that one of the first principles of shelter design is to conceal the patrons from public view in order to secure approval from the community in which they are to be situated.

Yet you charge me with arrogance, while you would strive to twist the disparate stories of countless homeless people into your own story as the benevolent designer.

Consider long and hard the currency that you are choosing for your own profession before you attempt to debase that of others. You've shown yourself for the scoundrel that you are, and I would sooner chase you away by barking than waste further words on you."

With my face flushed from both bark and bite, I clambered to my feet, and collected my papers. Before turning to leave, I spat out one environmental fact that I knew for certain.

"You may be wise, Diogenes, but you have forgotten something. You are not in Athens anymore. Come late December, we will see how inconsequential architecture is to your survival."

I had walked but a few strides away when he called after me with the challenge.

"You can let me freeze to death if you want to, but then you will never know the truth."

I halted in my tracks and looked warily back over my shoulder at him. He was seated in his tub again, shielding the sun from his eyes with his hand as he gauged my reaction. Clutching my notes to my chest, I limped back to him, wiped the blood from my cheek and sat down.

And so my conversation with Diogenes began....

R- You know the Truth?

D- I suppose it seems old-fashioned, to speak of universal things.

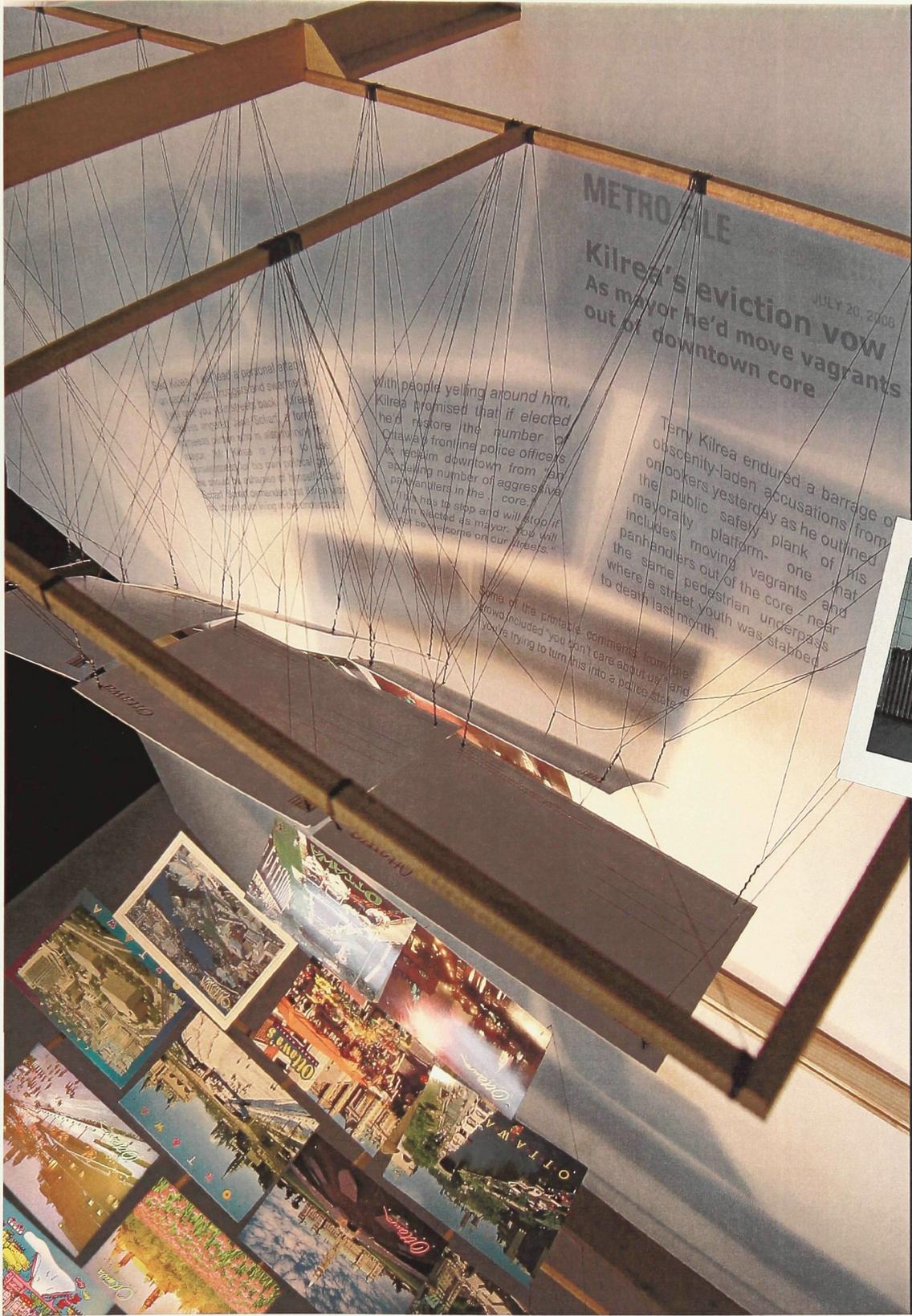
Delighted with this misstep, I scrambled hurriedly through the postmodern arguments at my disposal, searching for the perfect opening gambit. He interrupted me with the gambit already in place.

D- The Truth my truth either way I suppose you have no choice but to accept my teachings as a valid voice, as yet another thread in your rich tapestry. Even you must admit, it promises to be a radical one.

Disarmed I remained the student, and returned dutifully to my work.







## Ottawa

060606 18:17 W8Z 4B0 118 JJJJJJJJ

From anywhere to anyone

De Partout jusqu'à vous



R- You teach by example then?

D- I stand in sharp relief to the postcard stories told about Ottawa

R- Postcard stories?

D- Buy some postcards and you'll see... the Tulip Festival... Winterlude... boating on the Canal... Parliament Hill... the National Gallery... shopping in the Byward Market...

R- But those actually are some of Ottawa's stories... some of my stories... you're not suggesting that, because you choose not to participate in them, they're invalid.

D- I'm suggesting that reading a story isn't the same thing as writing one. You undoubtedly know that these stories are carefully authored by others, that groups like the NCC phrase, edit and re-edit them until they are 'just so'

R- But their authors' intentions are admirable... surely these are good stories?

Canada Day celebrations.  
Les fêtes du jour de la Confédération, le premier juillet.

DESIGNED AND PRINTED BY  
The Postcard Factory, 2801 John Street, Markham, Ontario L3R 2Y8 (905) 477-9901

Printed in Canada/Imprimé au Canada

Photo: J. Coats  
Ref: 01-27



## Ottawa

060606 18:17 W8Z 4B0 118 JJJJJJJJ

From anywhere to anyone

De Partout jusqu'à vous



D- Apparently they are the stories that you want to hear... that you enjoy reading to others. The danger lies therein... that they will seduce you into mistaking them for the only stories... and they will thus begin to overwrite and rewrite all other stories currently being composed.

R- I don't follow you... overwrite and rewrite how?

D- In various ways. By encouraging you to dismiss other stories as insensible, undesirable, or insignificant.

By encouraging you to retell new stories using terms that fit the assumptions of the stories you already know.

In my case, by sleight of hand... by focusing your efforts on softening my hard edges to lessen the relief of my stance, and thus distracting you from the stance itself.

Diogenes

No fixed abode

Ottawa, Ontario

Canada

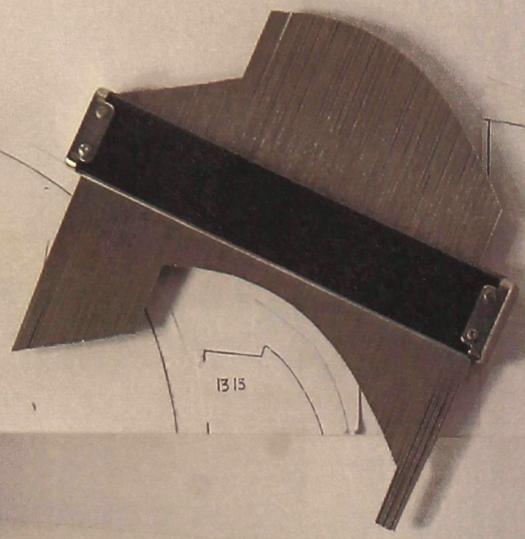
Skating on the Rideau Canal, with the Canadian Parliament buildings and Chateau Laurier Hotel in the background.

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The Postcard Factory, 2801 John Street, Markham, Ontario L3R 2Y8 (905) 477-9901

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Photo: J. Cochrane

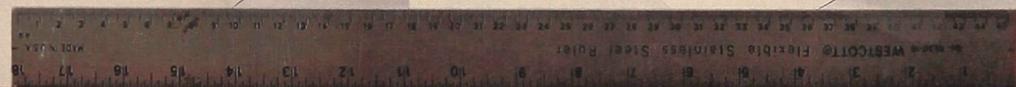
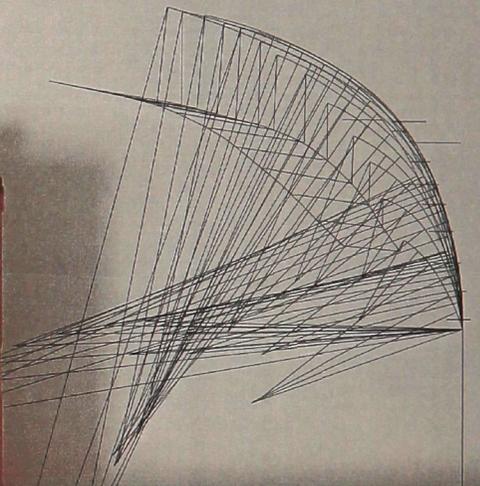
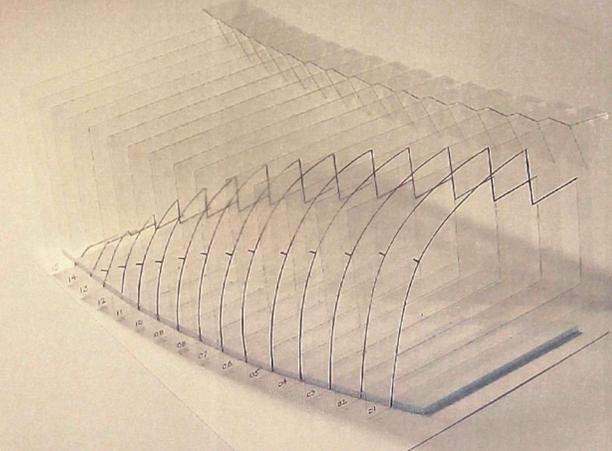
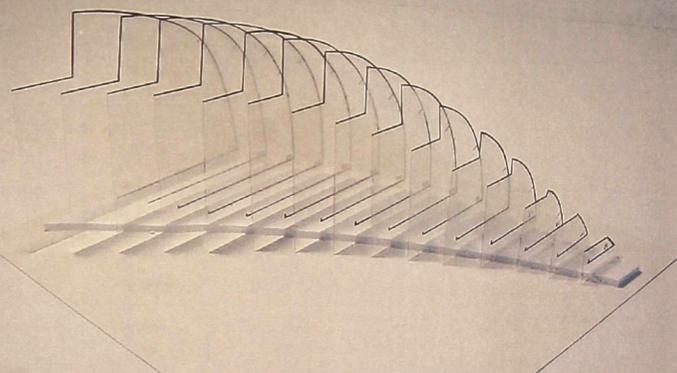
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I felt my cheek gingerly. It was bruised, but no longer bleeding.  
R- You suggest that architecture assists in this. If so, isn't it also necessarily capable of resisting... of amplifying other stories... of reinforcing their use of terms?

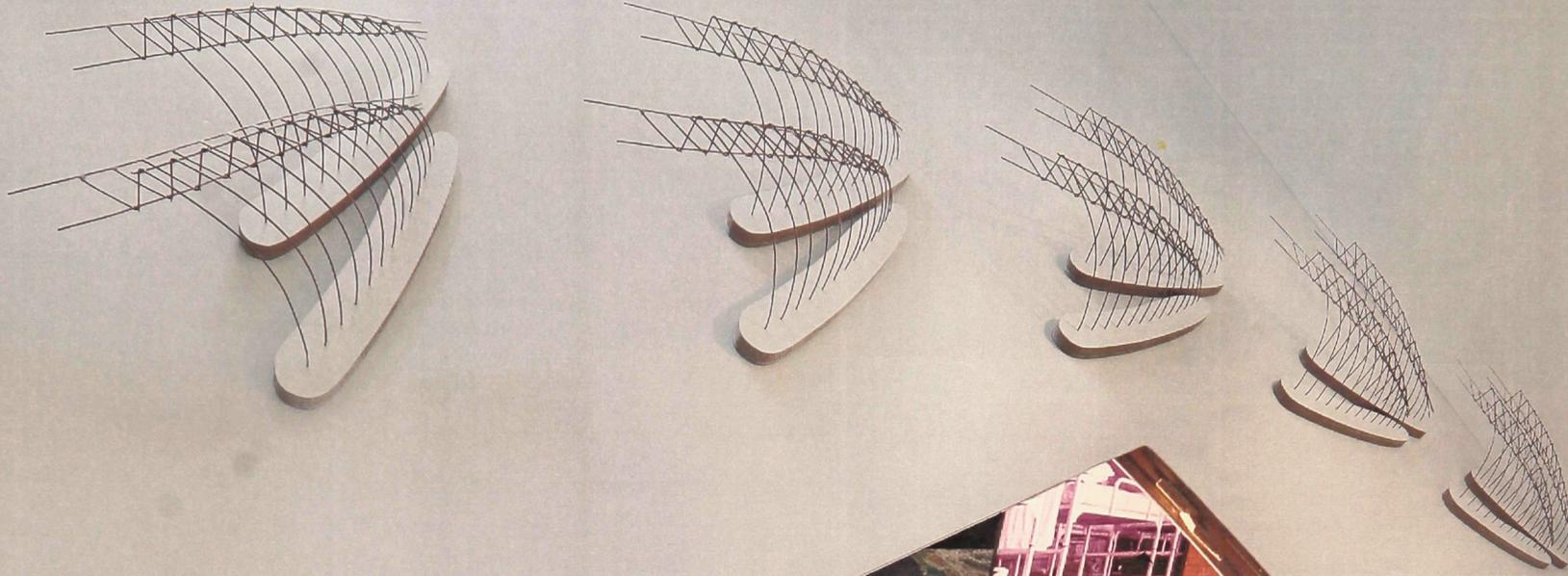
I'd directed the question more to myself than anyone else, but as I considered its implications, I realized that Diogenes was staring at me intently. He waited expectantly until, exasperated by my silence, he dropped his stick in his lap and gestured wildly with both hands to the surrounding tub.

D- I suppose it has never occurred to you to wonder why I live in this... why most all who have painted me depict me thus.



a) mould strips of aluminum sheet faced with paper around 1:50 scale human figures developed from illustrated standards b) glue strips together to form a rigid shell c) using a laser light, trace parallel lines over the shell at regular intervals d) transfer lines to paper sheets with a carpenter's profile gauge keeping sheets in order e) copy lines to sheets of acetate spaced at some intervals f) compare resulting shapes and sections with scale figures g) adjust shapes as required by altering lines h) import scanned images of acetate into cad file i) trace curved vectors over images j) locate centres of curves graphically k) plot the arc passing through centres of circles in xy and z planes l) adjust curves through centres to form spline curves m) regenerate sections from resulting points n) print sections o) copy them to acetate p) reassemble at interval spacings q) compare resulting shapes and sections with scale figures r) adjust shapes as required by altering lines s) reiterate generative process

R- Because... the tub does this... it reinforces, articulates your story...  
He beckoned me on.  
R- So is it not possible to design something that, in saving you from freezing, amplifies instead of softens your voice?  
He chuckled.  
D- You will have to compete against some loud voices indeed.



R- But if the key is juxtaposition, the articulation of postcard stories by placing your story against them, then amplification is a matter of contrast, not volume. Surely it always works in your favour then: the louder their voice, the more elaborate their story, the sharper the contrast.

D- You sound like you are proposing a Wodiczko projection. But the stories we are talking about are not written in a fixed place, or even at a fixed time. They emerge and recede at different times in different places.

Fearing another beating, I chose my words carefully.

R- You've spoken of shelters that are forced to suppress their patrons' stories in order to gain local acceptance. Why not do the opposite? Pull your story through the city during rush hour... draw it on a Sunday afternoon through the experimental farm. You could wake up in the middle of the Tulip Festival one day, the Sparks Street Mall the next.

D- I have seen mobile shelters. They inevitably speak of the concerns that produce them: a desire to provide domestic space and amenities that is tempered by the technical requirements of transportation, and by financial pressures which, in turn, prefer shapes that can be efficiently manufactured. As such, they could scarcely be more unlike this tub. They rewrite the stories of their inhabitants into the triumph of technology over adversity.

R- But what if our concerns were different?... if we were to design a shelter that resisted apprehension in these terms? We could provide enough enclosed space to allow you to sleep in winter without freezing, but mould the form around you to frame you in your lecturing, in your living, as your tub now does. Seen from other perspectives, it need not look like a habitation at all... a piece of moving landscape, wandering through a city that prides itself on its landscaping.



He seemed slighted.

D- You talk as if I am all alone. I do have disciples.

R- Then we make several... in such a way that each maintains its individuality, yet can connect seamlessly into groups when desired... during winter's fiercest times, when, sadly enough, many homeless people are compelled to abandon shelters as higher attendance leads to decreased individual security.

D- But the story of technological triumph over adversity continues.

R- Give me a chance... time to develop a proposal... time to think things through. What's the cost to you?... some more time spent? The cost to me?... another potential beating?

He laughed and waved me off.

When I finally tracked him down again, he was in his tub in Gatineau Park, lecturing tourists who'd come to see the fall colours. I hauled some models and drawings from the car and with them, walked him through my journey.

When I finished talking, he asked me the closest thing to a question that he ever would.

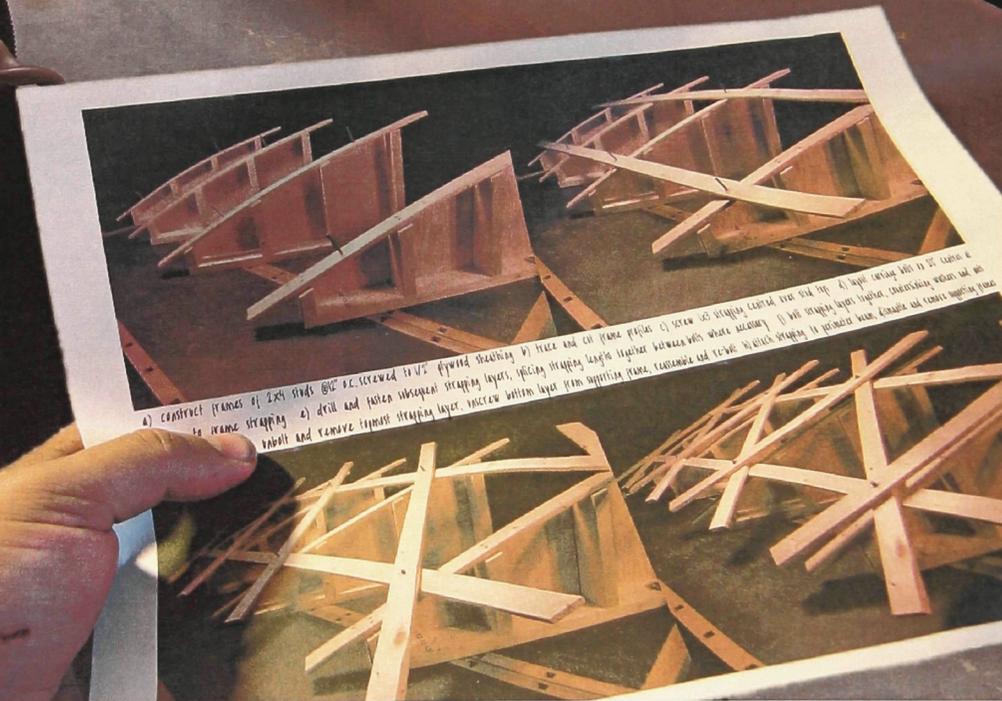
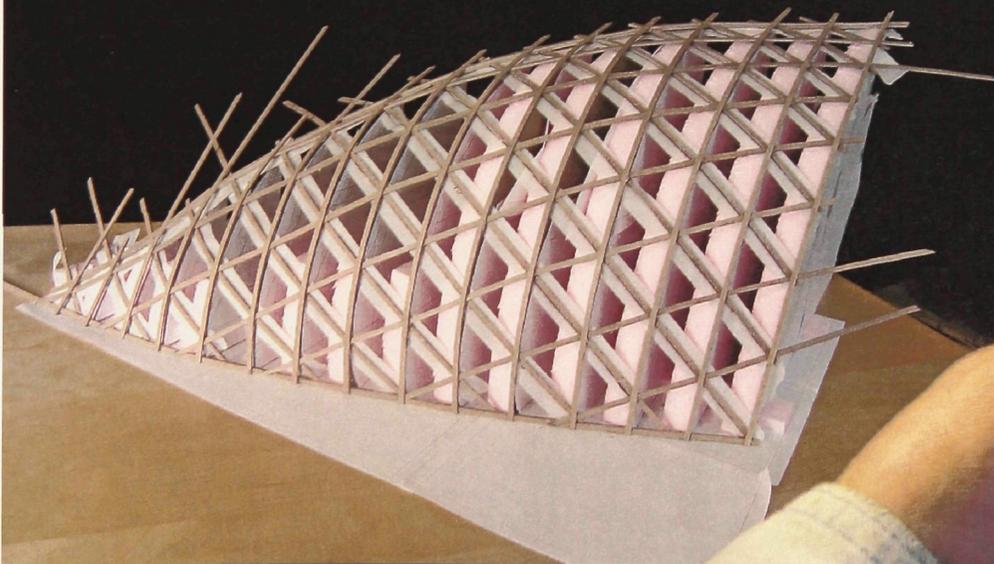
D- And the matter of technology overcoming adversity?

I took a deep breath.

R- But aren't your teachings, after all, a form of technology that battles adversity by challenging conventional definitions of it? Here that battle is fought on similar ground. The intention is the same: by exploring the way you live, to challenge the assumptions underlying the more conventional ways in which we relate to our environment... to the city... to the homeless... Granted, the shapes I am proposing require sophisticated means of controlling the information needed to describe them. But once that information is controlled and made retrievable, the actual physical production need be no more complex than the staving of your tub.

I handed him pictures of the proposed method of assembly, and described the process as he leafed through them.

D- For all your argument against prescriptive approaches, it appears you've found some use for them after all. Perhaps in Canada, some tubs have to be staved.



R- So when do we start building?

He smiled wryly.

D- Perhaps it can be built, but it will never be put into practice. My freezing to death will be far more palatable to both the city and the NCC.

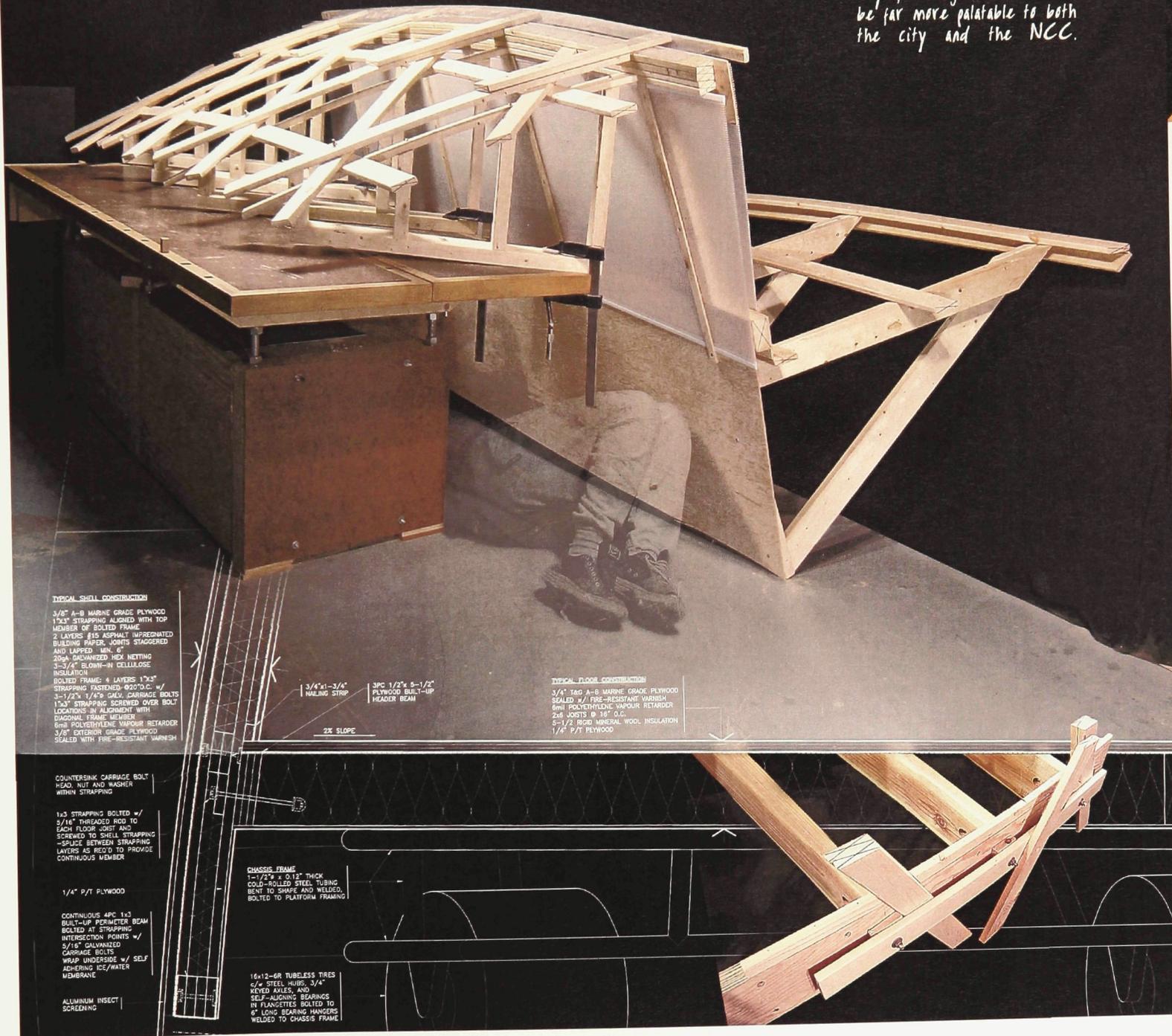


My enthusiasm crumbled.

R- So, in the end I have failed... you have spoken to me about practice, and I have responded with words and pictures. Soon you will freeze to death, your voice will be silenced, and it will all have been a waste of time.

I buttoned my jacket against the cold as the sun dropped below the trees.

R- Perhaps it always was. If the limits discourse is right, it seems our current bent has likely sealed our fate. If the Prometheans are right, there never was any point in worrying.



**TYPICAL SHELL CONSTRUCTION**  
3/8" A-B MARINE GRADE PLYWOOD  
1 1/2" STRAPPING ALIGNED WITH TOP MEMBER OF SOLID FRAME  
2 LAYERS #15 ASPHALT IMPREGNATED BUILDING PAPER JOINTS STAGGERED AND LAPPED MIN. 6"  
20GA GALVANIZED HEX NETTING  
3-3/4" BLOW-IN CELLULOSE INSULATION  
BOLTED FRAME & LAYERS 1 1/2" STRIPPING FASTENED @ 20" O.C. w/ 3-1/2" 1/2" CALV. CARRIAGE BOLTS  
1 1/2" STRIPPING SCREWED OVER BOLT LOCATIONS IN ALIGNMENT WITH DIAGONAL FRAME MEMBER  
GIRL POLYETHYLENE VAPOUR RETARDER  
3/8" EXTERIOR GRADE PLYWOOD SEALED WITH FIRE-RESISTANT VARNISH

3/4" x 1-3/4" NAILING STRIP  
3PC 1/2" x 3-1/2" PLYWOOD BUILT-UP HEADER BEAM  
2% SLOPE

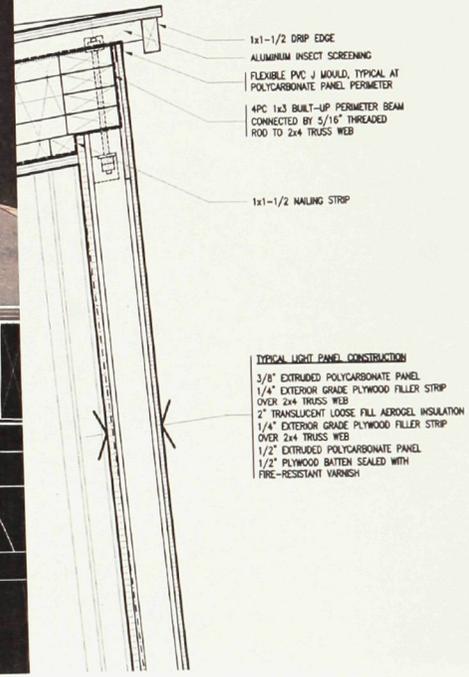
**TYPICAL FLOOR CONSTRUCTION**  
3/4" 160 A-B MARINE GRADE PLYWOOD SEALED w/ FIRE-RESISTANT VARNISH  
6MM POLYETHYLENE VAPOUR RETARDER  
2x6 JOISTS @ 16" O.C.  
5-1/2" ROSE MINERAL WOOL INSULATION  
1/2" P/T PLYWOOD

COUNTERSINK CARRIAGE BOLT HEAD, NUT AND WASHER WITHIN STRAPPING  
1x2 STRAPPING BOLTED w/ 5/16" THREADED ROD TO EACH FLOOR JOIST AND SCREWED TO SHELL STRAPPING -SPURSE BETWEEN STRAPPING LAYERS AS REQ'D TO PROVIDE CONTINUOUS MEMBER

1/4" P/T PLYWOOD  
CONTINUOUS 4PC 1x3 BUILT-UP PERIMETER BEAM BOLTED AT STRAPPING INTERSECTION POINTS w/ 5/16" GALVANIZED CARRIAGE BOLTS WRAP UNDERSIDE w/ SELF-ADHERING ICE/WATER MEMBRANE

**CHASSIS FRAME**  
1-1/2" x 3-1/2" THICK COLD-ROLLED STEEL TUBING BENT TO SHAPE AND WELDED BOLTED TO PLATFORM FRAMING

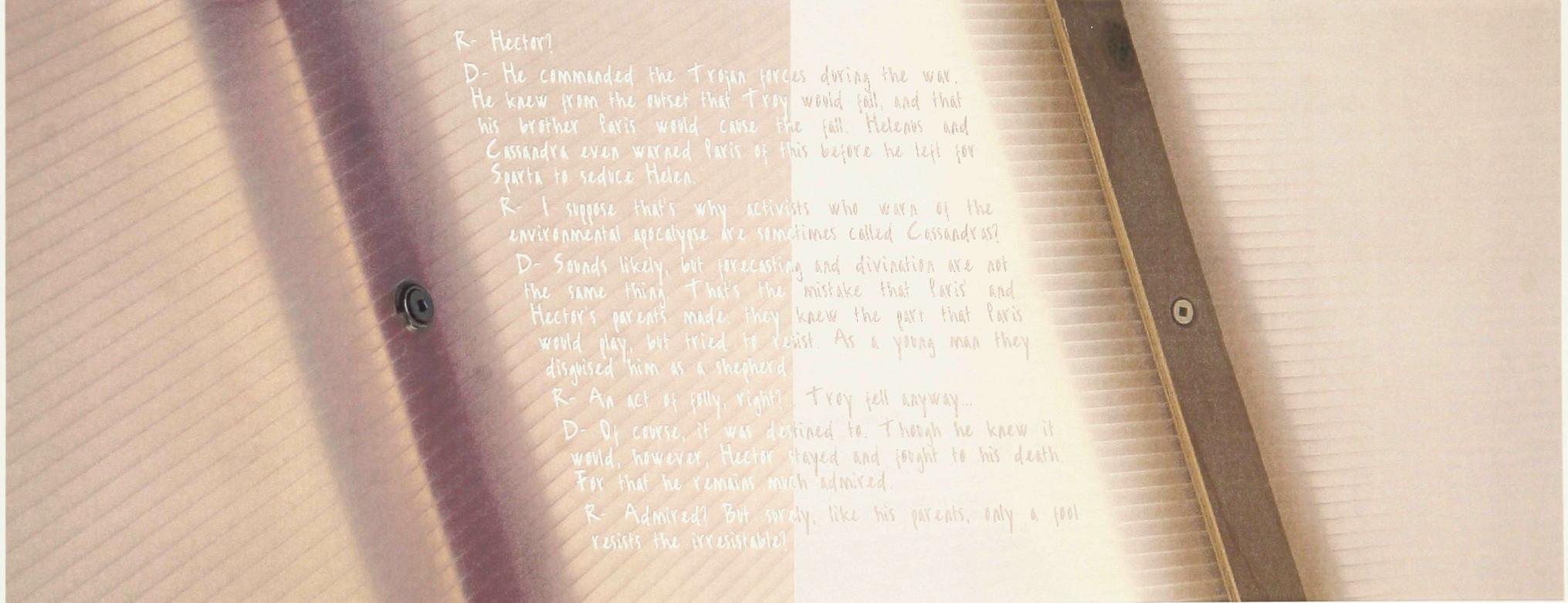
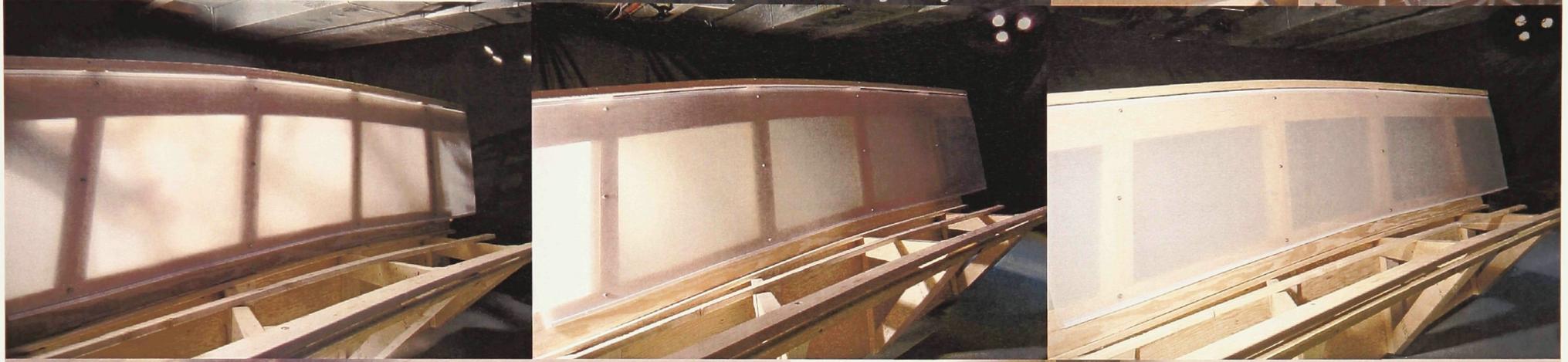
16x12-OR TUBULESS TIRES 6x4 STEEL HUBS, 3/4" KEYS AXLES, AND SELF-ALIGNING BEARINGS IN FLANGETTES BOLTED TO 6" LONG BEARING HANGERS WELDED TO CHASSIS FRAME



# Nanogel® Aerogel Named Best Innovative Product for Energy Savings at Bau 2005

Nanogel® translucent aerogel, Cabot Corporation's daylighting material that combines high light transmission and high thermal insulation, was named 'Best Innovative Product for Energy Savings' at Bau 2005, Germany's leading building exhibition. The product was selected by a jury of 100 participants, the editors of *Deutscher Architekturmagazin* (D.A.M.) and *Architectural Record*. 'Nanogel was chosen for its high light transmission and energy efficiency,' said James Setzer, Cabot's product manager. 'Industry response to our product underscores the demand for energy-efficient glazing solutions, incorporating Nanogel. Significant installations of Cabot's aerogel product in Europe, Nanogel was used in the new daylighting elements on the sports hall in Zurich, Switzerland. EMPA (Swiss Federal Laboratories for Materials Testing and Research) and completed project and confirmed the architects' assumptions of high light diffusivity.'

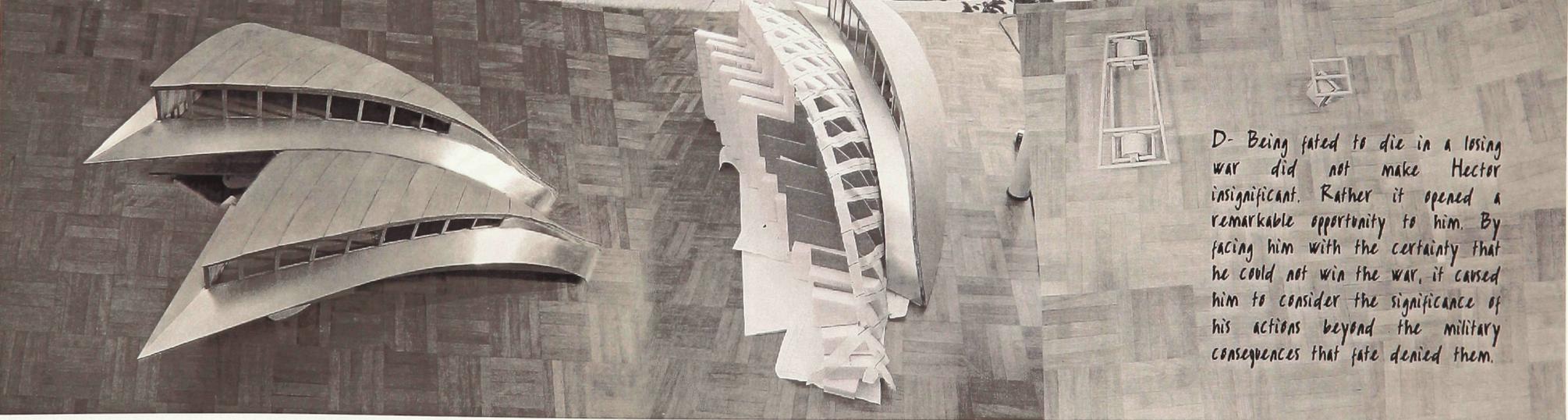
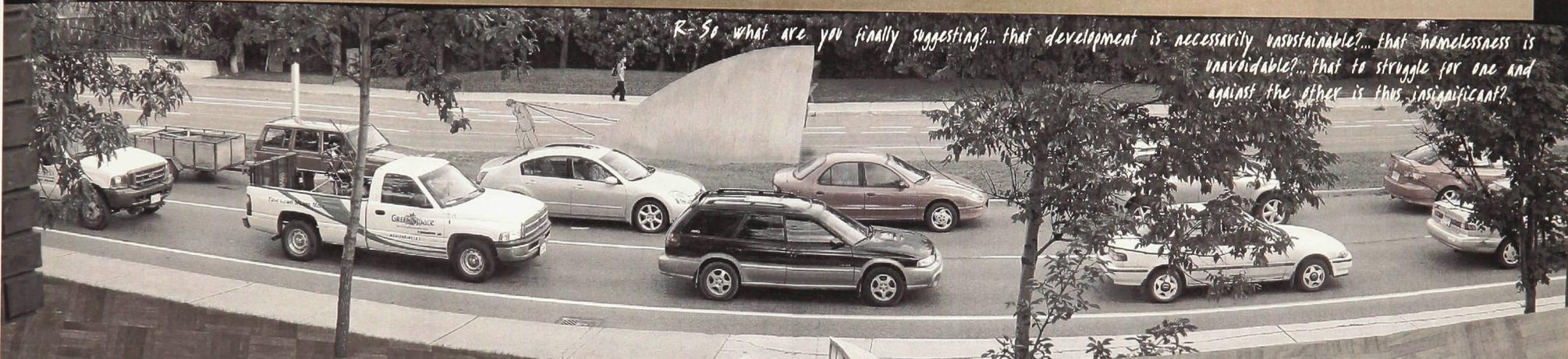
He clapped a hand on my shoulder.  
D- Perhaps, when you do build a prototype, you should name it after Hector. They name ships, after all, and he was much admired.



D- Means and ends... means and ends... I sometimes wonder whether you've heard anything I've said.  
I floundered.

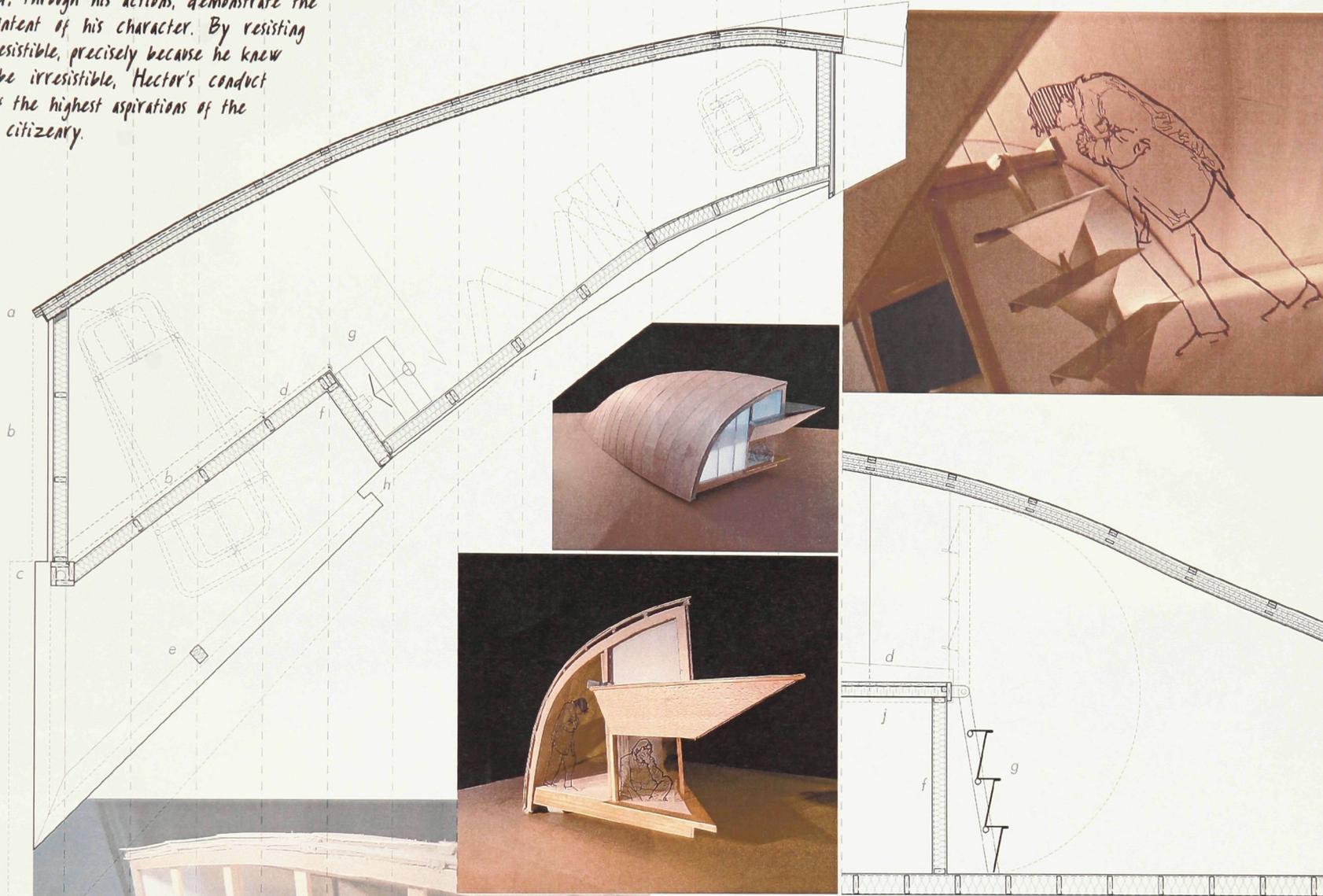


R- So what are you finally suggesting?... that development is necessarily unsustainable?... that homelessness is unavoidable?... that to struggle for one and against the other is thus insignificant?



D- Being fated to die in a losing war did not make Hector insignificant. Rather it opened a remarkable opportunity to him. By facing him with the certainty that he could not win the war, it caused him to consider the significance of his actions beyond the military consequences that fate denied them.

D- Hector realized that in facing the inevitable he could, through his actions, demonstrate the true content of his character. By resisting the irresistible, precisely because he knew it to be irresistible, Hector's conduct spoke of the highest aspirations of the Trojan citizenry.



a. mating section to platform of adjacent unit: 3-pc 1x3 built-up perimeter beam bolted to shell frame, reinforced at floor elevation w/ 1/4" bent steel plate.

b. operable translucent insulated front panel: 1/2" extruded polycarbonate panels over 2x4 stud framing c/w curved, built-up plywood jamb on shell side and let-in 1/2" plywood bracing on interior side, filled with 3-1/2" aerogel insulation.

c. concealed and insulated rainwater leader serving overhang above. Extend leader below platform soffit.

d. sleeping platform supporting beam above: 3pc 1/2" plywood built up beam suspended from bolted shell frame by galvanized 1/2" steel threaded rod @ +/-25" o.c.

e. 3-pc 2x4 built-up column: bolted to platform perimeter beam and fitted with inverted galvanized adjustable floor jack to secure unit from rolling.

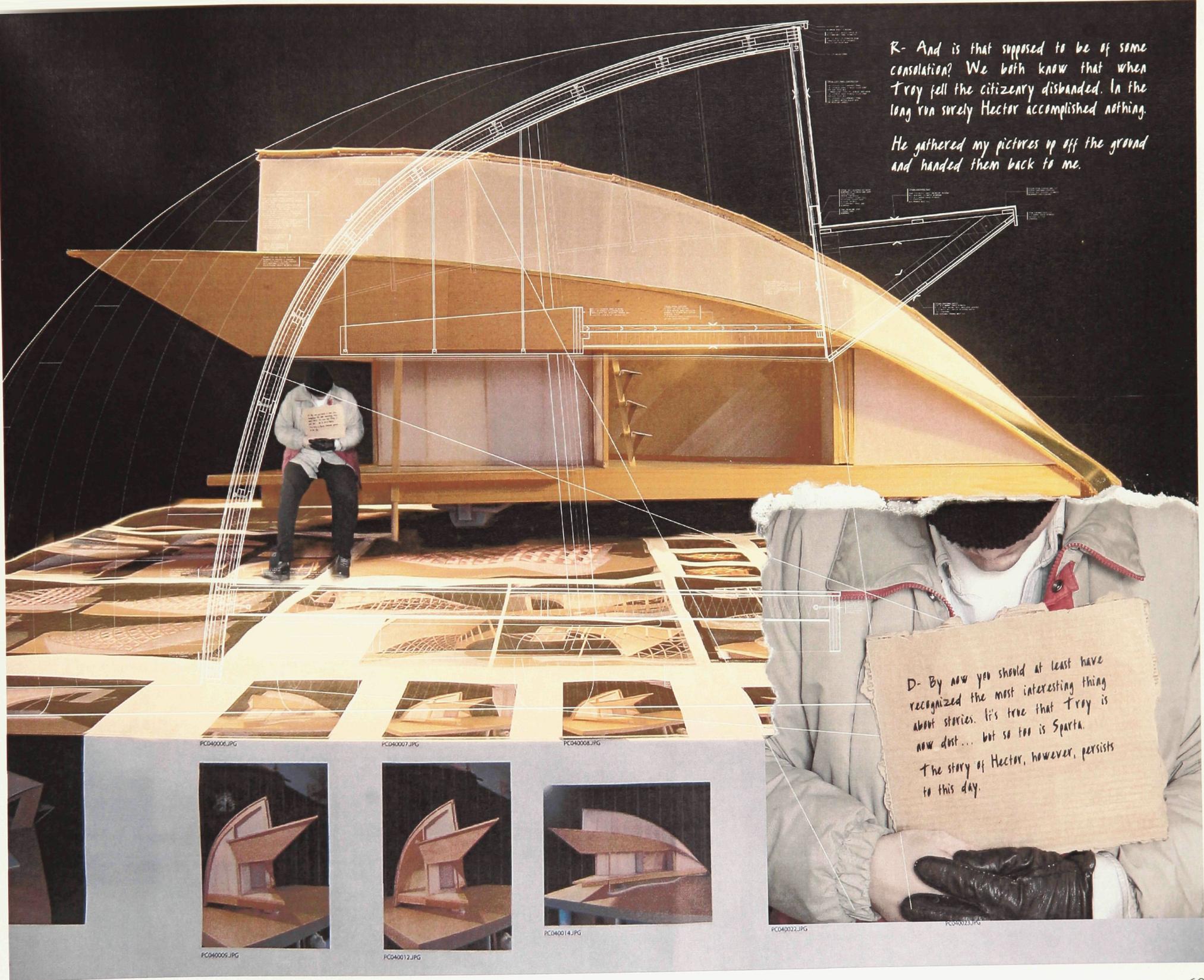
f. fixed translucent insulated panels: 1/2" extruded polycarbonate panels over 2x4 framing filled w/ 3-1/2" aerogel insulation. Seal panels to framing with clear silicone caulk.

g. moveable sleeping platform ladder: three 0.25" rolled and bent aluminum plate treads fastened to 1-1/2" dia. hardwood rungs thru 2x4 hardwood stringer hinged at platform level.

h. mating section to shell of adjacent unit: 3"x3" x1/4" galvanized channel bolted to platform perimeter beam.

i. translucent insulated accordion panels: 1/2" extruded polycarbonate panels over 2x4 framing filled w/ 3-1/2" aerogel insulation. Join panels with continuous st. steel piano hinge. Fit heads and jambs with gaskets and top and bottom flush bolts.

j. sleeping platform: 6x 5/4" t&g pine decking, 3-1/2" rigid mineral wool insulation adhered to decking with vapour retarding mastic, 1/2" exterior grade plywood mechanically fastened through insulation to decking and sealed w/ fire resistant varnish.



R- And is that supposed to be of some consolation? We both know that when Troy fell the citizenry disbanded. In the long run surely Hector accomplished nothing.

He gathered my pictures up off the ground and handed them back to me.

D- By now you should at least have recognized the most interesting thing about stories. It's true that Troy is now dust... but so too is Sparta. The story of Hector, however, persists to this day.

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