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Publication details:

NEERG Seminar: DEALING WITH DAs & SEPP65: 2006 UPDATE

Event details:

NEERG Seminar: DEALING WITH DAs & SEPP65: 2006 UPDATE
Sydney, Australia

Publication Date:

2006

DOI:

<https://doi.org/10.26190/unsworks/604>

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DEALING WITH DAs & SEPP65: 2006 UPDATE
NEERG Seminar, 16 March 2006, Powerhouse Museum

Site analysis for successful DA schemes

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Site survey and **site appraisal** are two terms that crop up almost interchangeably in various instruments relating to development control. Most practising architects and planners take it for granted both that they know what these terms mean, and that as part of their day-to-day work they undertake the processes that those terms describe.

Yet the overwhelming impression when one vets typical development applications for multiunit residential developments is that neither has the appropriate site appraisal process been carried out, nor do the applicants appreciate to what degree a properly carried out *and documented* site appraisal would aid in the consideration of their application.

A fundamental mistake. I am sure my planning colleagues will confirm that Council officers find it easier to understand *design intent* with reference to evidence of a good site appraisal — than they do from the usual architects' statements, so often appended almost arbitrarily to the planning compliance documents. This is all the more true should the matter come before the Land and Environment Court, where a site appraisal, when available, may be taken very seriously indeed. Which is as it should be, considering that 'site analysis' is prescribed in the Residential Flat Design Code, and in many Councils' DCPs.

Why a site appraisal?

At the risk of being obvious, let's clarify the purpose of a site appraisal.

Firstly, it is or should be a routine part of the process of designing any building in response to its particular site. It should be carried out *early* in the design process, it should be *comprehensive*, and it should be meaningfully *connected to the design intent* that subsequently determines the design proposal for that site.

Secondly, by properly *documenting* the site appraisal process, the designer is in a position to *communicate* — to any authority making compliance determinations about that application — exactly why the design proposal responds to its local constraints the way it does.

One of the difficulties for designers in appreciating and using properly documented site appraisals is a degree of confusion between the roles of such a site appraisal document, and information routinely incorporated in the better-known Statement of Environmental Effects. Personally, I've never really understood why this should be so. The Statement of Environmental Effects should be more or less exactly what it says: concentrating on environmental factors relating to the development — but doing so in detail and possibly by reference to detailed reports by other consultants, such as acoustic experts. Also, more or less by definition, environmental effects are those of the proposal, and therefore should concentrate on evidentiary modelling *after* the initial design.

In contrast, a properly carried out site appraisal should not only occur *before* such a design is prepared, but its very methodology should help the designer avoid premature design decisions leading to *post hoc* rationalisations. This paper sets out a distinction between various parts of the site appraisal process, specifically to clarify such a methodology.

It is also my experience that most designers simply do not bring to bear on the site appraisal process *appropriate techniques* to improve the quality of the data, the analysis, or the inferences that may be drawn from that analysis. While the discussion of such techniques is beyond the scope of this paper, it is the subject of the accompanying presentation.

The *site appraisal* process

In spite of the title of this presentation and paper, I prefer the term *site appraisal* to describe the overall process. The term *site analysis* for me carries a narrower meaning, as I will explain below.

Following a conceptual model quite common in landscape architecture, I divide the site appraisal process into three distinct stages or activities:

- site *survey*;
- site *analysis*; and
- *constraints and opportunities*

I define these three stages as follows:

SURVEY:

All information *measurable* and *recordable* on the site.

ANALYSIS:

Other information, which may be *derived* from the surveys, and the combination of surveyed information with additional data, such as climate information. Examples are:

- Site sections and contours developed from spot levels; sun exposure and overshadowing at key times;
- slope analysis for drainage;
- wind exposure predictions based on regional winds and local topography, etc.

OPPORTUNITIES AND CONSTRAINTS:

Identified by matching the *brief* and applicable regulations *against the site analysis*. Examples are:

- optimum entry point for cars;
- likely requirements for screening for noise or overlooking;
- preferred locations of bedrooms, etc.

So why would one make this distinction so rigidly? As I have hinted, for efficiency of the design process, and accountability of the decisions.

As will be immediately apparent, one can carry out both the Survey and Analysis activities I define without actually knowing what one wants to do with the site. On the other hand, one can't assess Constraints and Opportunities unless one has a vague idea of the brief. If one 'pollutes' the survey and analysis with preconceptions based on the brief, what happens if the brief changes? Does one redo the analysis?

For most projects, this may seem a trivial problem. But the practical reality is that if most designers *never* formulate an accountable office practice based on such simple principles, we do end up with the damning diagnosis I make in my introduction.

To help designers and planners a little in that process of better understanding the methodical process of carrying out and documenting site appraisal, I suggest here three checklists for site appraisal. They are derived from a number of sources, including the venerable Green, R. *The Architect's Guide to Running a Job* Architectural Press (Various editions).

SITE SURVEY CHECKLIST

Location & Content

- site in relation to surroundings, existing architectural character, adjoining buildings (in particular location of windows, etc.)
- Owners and occupants' names and addresses, adjoining properties' postal addresses
- Local Authority and other regulatory bodies with jurisdiction

Boundaries

- Approximate dimensions and orientations — check against surveyor's plans if available

Topography

- contours, spot levels, etc.

Climate

- rainfall, wind, sun, frost, macro and micro, etc.
- Surface Water
- natural drainage patterns, direction and rate of flow, depth, erosion, etc.

Subsurface Water

- marshy and wet areas, erosion, landslip, etc.

Geology and Soils

- types, quality, depth, original or fill, underlying rocks and rock outcrops, etc.

Vegetation

- position, type, species, height, spread, etc.; complete ecological survey, if appropriate.

Access & Circulation

- existing circulation patterns, roads, paths, etc. materials, condition, where does the site begin, what is the nature of the approach?

Buildings and Artefacts

- existing (and proposed?), heights, materials, access, etc.

Services

- above and below ground, electric, water, gas, telecommunications, surface drains, sewers, culverts, etc.

Views

- into and out of the site. Best denoted by marking up precise 'cones of view' in both plan and section, from relevant points on the site.

Miscellaneous

- other appropriate items for any particular site.

ANALYSIS GUIDELINES

Topography

- translate spot levels to contours and analytical sections of site and surroundings.

Climate and microclimate

- obtain applicable regional climate data
- identify local modifying factors, such as wind shelter, early or late sunsets due to surroundings, etc.
- relate to survey evidence, eg. late frost on ground, moss growth.

Sun access and overshadowing

- obtain applicable solar position data
- identify yearly shadow patterns as they apply to the site.

Areas or Volumes of Space

- particularly well sheltered, catching full sun, possible frost pockets, etc. Sometimes identified by computer or hand generated 'exposure analysis' diagrams.

Vegetation

- projected growth or loss over time

Views and sightlines

- use plans and sections to identify obstructed or not able to be recorded on site

Access and circulation

- translate 'erosion and accretion' evidence noted during site survey.

Buildings and Artifacts

- appearance, quality, character, colour, massing, relationships to ground, to each other, etc. observations and comment.

Wildlife and Habitat

- Relationship to regional ecology: animals, birds, etc., nesting, wading, feeding, etc. Migration corridors, etc.

Areas of particular interest

- cultural, historical, scientific, etc. usually by matching up with local history, conservation orders or strategies.

Application of regulations

- setback lines, rights and easements, sun or light angles for neighbouring properties, etc.

Miscellaneous

- other appropriate items for any particular site.

CONSTRAINTS AND OPPORTUNITIES

Views

- into and out of the site, good and bad, others worth creating by 'opening up' action or requiring screening etc.

Areas or Volumes of Space

- particularly appropriate for special uses, e.g. flat, dished, etc. Sometimes shown by a comprehensive 'slope analysis' diagram.
- particularly beautiful or with distinct character of high quality, particularly poor and in need of drastic improvement, etc.
- particularly well sheltered, sunlit, adversely exposed for certain uses, etc.
- potential screening for wind, sun, noise

Access and Circulation

- particularly appropriate routes, desire lines, etc. for vehicles and pedestrians

Vegetation

- choice specimens or groups which ought to be retained, poor quality vegetation, possibly needing attention or removal.

Possible Danger

- areas needing special attention, e.g. water, fire, cables, traffic, etc.

Existing Spoilation

- vandalism, misuse, litter dumping, noise, fumes, etc.

Buildings and Artifacts

- retention, adaptation, reuse, demolition, etc.

Wildlife and Habitat

- upstream and downstream effects of potential development

Areas of particular interest

- cultural, historical, scientific, etc.

Miscellaneous

- other appropriate items for any particular site.

For easy reference, I also include here a typical local council's DCP requirements, and finally a facsimile of the Residential Flat Design Code's own checklist.

Concerning the latter, I raise a small note of caution: as will be apparent in my presentation, I would consider the *illustrations* in the RFDC to be the *minimum* standard, not the norm, to which an applicant should aspire. They are generic, of the kind often found in instruction manuals and codes. An actual site appraisal carried out for a real project would deserve illustrations of a much more focused and particular content.

Typical DCP requirements for site analysis

Lane Cove



RESIDENTIAL ZONE "2(b1)"
TOWNHOUSE DEVELOPMENT CONTROL PLAN

Part 1 - Site Analysis

Applications for townhouse development on land within the Residential 2(b1) Zone will be consented to unless the Council is satisfied that:-

(i) A site analysis has been carried out, including:-

- **Site Dimensions:**
- Length
- Width
- Area
- **Topography:**
- Spot levels and/or contour
- Natural drainage
- Any contaminated soils or filled areas
- **Services:**
- Easements
- Connections for drainage and utility services
- **Existing Vegetation:**
- Location
- Height
- Spread of established trees
- Species
- Bushland
- **Micro Climates:**
- Orientation
- Prevailing winds
- **Location of:**
- Buildings and other structures
- Heritage features and items including archaeology
- Fences
- Property boundaries
- Pedestrian and vehicle access
- **Views**
- To and from the site
- **Overshadowing**
- By neighbouring structures

Source: Lane Cove DCP21