3.0 LANDSCAPE CHARACTER ANALYSIS

The landscape character analysis is a very important step in the design process. The landscape is the substrate and context for any action. The aesthetic qualities of naturalness, which are highly valued by society, determine the outcome of the design. Therefore, in order to design in harmony with the landscape we must have a deep understanding of its composition and patterns. If we do not, we run the risk of superimposing patterns which damage the unity and Genius loci.

Forest managers are normally familiar with analysing various aspects of the forest as part of planning and decision making. Usually this encompasses information such as soils, terrain, timber inventory, and access. In order to plan and design forest operations to fit the landscape, an analysis of its character is needed. This is used together with the other information to give a more complete view of the area. The landscape character analysis should be carried out using the terminology explained in the previous section. Because of the importance of three dimensions and views of the landscape, it is insufficient to rely on maps for this analysis. In addition to maps therefore, panoramic photographs and computer generated terrain simulations, if available, are necessary.

Landscape character analysis is by no means difficult once the materials and base information are available. It is best to split the work into two sections: an analysis of landform structure using visual forces and an analysis of the elements of diversity, natural features and vegetation, which can be called a ‘land feature analysis’. In addition, if the landscape has already been altered by logging, those visual attributes should be assessed and recorded.

3.1 LANDFORM ANALYSIS

This stage involves preparing a comprehensive visual force analysis in plan and perspective.

- In simpler, more visible landforms with fewer viewpoints it is possible to work on the perspective, transferring to plan at the same time.

- If the area is extensive, the landform fairly complex and the landscape viewed from a number of places, it is better to start the analysis on the topographic map, later transferring the analysis onto photographs. This helps ensure the greatest accuracy and consistency between plan and perspective and between different views.

Analysis Process:

1. Identify and label all major peaks, summits, ridges and saddles on both the photograph(s) and topographic maps. These landmarks will help make the transition between plan and perspective easier.

2. Starting on the topographic map pick out either the convexities or the concavities and complete each set before working on the other. This makes the job simpler. Often it is easiest to start with the convexities. Using a red felt tip pen identify the major convexities and ridges from the contours. Try to ensure that the lines follow the apexes of the ridges as far as they can be traced.

3. Identify secondary strength ridges which will tend to spring from the primary ones. A branching pattern may well emerge. It is usual to find that the number and structure of arrows relates closely to the structure of the landform. There are naturally going to be more force lines in a broken, jagged landform than a smooth flowing one. There may be 3 or 4 levels in the hierarchy of forces, shown by different thicknesses of arrows.
4. Once the convexities are completed repeat the process with a green felt-tip pen on the concavities. Some of the major hollows will coincide with streams or rivers while others may be dry. Occasionally, stream features are not associated with readily identifiable hollows; in that case they should be ignored. A connected, dendritic system of green arrows is usual.

- If either the hollows or convexities are generally more dominant then the primary arrows should be thicker to emphasise this, as the fact may have an impact on the later design.

The process of visual force analysis on a topographic map. Note how the varying thickness of the arrows reflects the relative strengths of different landform features.
A landform analysis in perspective view.

The same analysis on a plan view of the landscape.

- It is possible that the contour maps, by reason of their resolution and the spacing of the contour lines, do not show all the visible features of the landform. In this case, additional arrows can be added from analysis of the photograph.

- Conversely, working from a photograph can be misleading when mature forest hides the topography and smooths over subtleties in the landform. It is important to try to look beneath the canopy because if logging takes place, the topography will be revealed.

- On completion, the structure of the topography should have become very clear. The very action of drawing the arrows will help to get the feel of the landform.

- Three dimensional computer simulations of the views help to show what lies beneath the trees or can be used to produce different viewpoints with the visual forces in place. This can help to show how the relative strengths of different parts of the landform vary depending on the viewer position.

- In some landscapes landform analysis is more difficult. In the flattest it is of little use, but in rounded, rolling landscapes with almost dome-like landforms it can be very difficult to find definite ridges. In these circumstances it is better to use the red arrows to indicate the regular, convex forms but to avoid using
3.2 LAND FEATURE ANALYSIS

The purpose of this analysis is to build upon the visual landscape inventory and identify all the various features on the landscape that make up its character, its diversity, visual absorption capability (VAC) and existing visual condition (EVC). It is not merely a question of identifying the features such as rock outcrops, vegetation, water features and so on, but to try to discern a pattern in their occurrence and distribution. There is some underlying logic to why some features occur where they do - rock outcrops related to geology, erosion and landform; vegetation to drainage, soil, exposure; water features to landform structures and geology; historic events such as wildfires or insect attacks or blowdowns which may have left their mark; and existing landscape alterations from human activities.

As for the landform analysis, the basic materials are the panoramic photos and topographic maps plus aerial photos, vegetation or forest cover maps and possibly soil maps.

- Much of the detail to be analysed can only be seen from the photos; it will not be recorded on maps.
- Other information can be transferred from the maps to overlays or photocopies of the photographs. Annotations and symbols are useful for this part of the analysis.
- There will be features beneath the canopy which might be revealed at logging. Some of these might help the design, others may flag up places where forest cover needs to be maintained.
- The notes and comments recorded on the plan and perspective should point out aspects of the pattern and the relationships between different parts of the landscape.
An additional benefit of all this work in perspective is that the salient points needed at the design stage are all recorded in such a way that they cannot be overlooked or ignored. This allows for reference back from the end product to some of the reasoning behind the development of the design.

The two analyses, landform and land features together, form the landscape character analysis.

- In order to be complete some further comments on the scale of the landscape, the contributors to *Genius loci* should be made and any existing visual problems identified. The latter can be included on the land feature analysis or be carried out separately, depending on how crowded the photos and maps are becoming.

- A balance should be struck between the desire to be comprehensive and the need to avoid confusion from too much information. Experience will help, but it is useful to try to look for the overall patterns rather than to concentrate on each individual detail. For example, a group of rock outcrops which all recur at a certain level or position on the landform can be recorded as a pattern rather than as a series of individuals.

### 3.3 THE LANDSCAPE CHARACTER OF BRITISH COLUMBIA

British Columbia has 6 physiographic regions which can be further sub-divided into landscape types on the basis of vegetation and climate: a sort of combination between the physiographic classification of Holland (1976) and the Biogeoclimatic Ecosystem Classification used by the Ministry of Forests. Each Forest Region, with the exception of Vancouver, contains more than one example of these different types. The following section examines a sample of these and contrasts the components of landscape character. The descriptions are general but serve to point out that there are major differences in the approach to design as a result of the variety of influences on landscape character.
1. THE COAST MOUNTAINS AND ISLANDS. Vancouver Forest Region, Prince Rupert Forest Region.

a. Coast mountains covered in forest

Landforms are steep, dissected but rounded in form. Scale is medium by British Columbian standards. The overall impression is given by the continuity of the almost unbroken forest canopy. There is little diversity of texture or colour. Some variation is provided by species differences, such as cedar, more dominant on the coastal flats and in the draws, or from occasional land slides, rock outcrops or locally higher tops with sparser cover. This type of landscape is one of the more difficult to design in because of the resulting low visual absorption capability. Landform is the strongest influence and will be the major cue to the designer.
b. Coast mountains with an upper tree line

The mountains in this type are higher, steeper and dissected, generally fairly rounded and smooth on the lower slopes but more rugged and fractured higher up. The presence of snow pack in winter above the tree line leads to avalanches and their tracks occurring at regular intervals break up the monotony of the forest. Island stands of trees are retained in the tops of the funnel shaped avalanche tracks and the forest gradually peters out at the tree line so that areas of lower density occur. Along the lower slopes, and especially in river valleys, broadleaves are plentiful providing colour and textural diversity. Such landscapes contain much variety and lots of hints to the designer. Landform is important as an influence supplemented by shapes and patterns provided by vegetation and the avalanche activities.
2. THE INTERIOR PLATEAU. Kamloops Forest Region, Cariboo Forest Region, Prince Rupert Forest Region, Prince George Forest Region

a. Northern section (excluding Kamloops Forest Region)

This landscape is characterised by large scale rolling landforms, sometimes almost flat, at other times consisting of large but smooth and rolling hills covered mainly in sub boreal spruce. Visually the landscape is extensive, in many areas appearing as a dense carpet of forest broken only by relatively local features such as river or creek valleys or by cleared agricultural land or where there is grass, wetland or areas of broadleaves such as birch, alder, aspen. Over much of the landscape the lower relief and wide horizons are very forgiving. Flowing, rounded shapes dictated by the subtleties of the topography are comparatively easy to design. In the flatter parts, the views are mainly of edges and internal shapes while in the more massive parts of the cone the visibility is greater requiring more care. One problem in this zone is that due to the slow growth rates and long winters with persistent snow pack, felled areas take a long time to reach visually effective greenup (VEG) thus reducing the flexibility of the designer. Visual absorption capability is helped by the enfolding landform and by the presence of the agricultural and other areas.

A small, medium scale landscape of virtually unbroken forest. The tree height and the subtle folds in the landform together create a lot of visibly dead ground. Distant skylines are prominent; so is any logging on them. Visual absorption capability is higher due to the above factors than might otherwise be expected given the solid forest blanket.

The landform analysis.

The land feature analysis.
A large scale, rolling landscape of large, simple landforms. Diversity is low as is visual absorption capability. Felling fit best where they follow on from agricultural land although scale needs to be well controlled.

The landform analysis.

The land feature analysis.
b. Southern section (Kamloops Forest Region, Cariboo Forest Region)

The drier, hotter climate contribute to the distinctive landscapes of this area. The relief varies from small to large scale but landform is simple and rolling for the most part. There is great variety in the character of the forest, from dense and even to sparse, almost park-like. This is very marked in the drier, western part. In places, the orientation of the slopes has a major effect, the forest being denser on north and east facing slopes and sparser on south and west facing. The landscape is varied by agriculture, both crop growing and ranching. In many areas, it has high diversity and consequently, a high visual absorption capability. While landform is important the patterns and textures of the forest cover are equally so in the cues available to the designer.

A small to medium scale landscape where the diversity within the forest is provided by openings and textural variations. Landform is subtle and local in its detail. The background is of a bigger scale and finer texture. The landscape as a whole is strongly influenced by agriculture which leads the eye to the lower, foreground part of the forest. The landscape has a high visual absorption capability except for the background.

The landform analysis.

Middleground forest is coarsely textured with open areas and variable density in the edges.

Background forest on higher hills is much finer in texture, landform is found and smooth.

A strongly inclined edge with outlying stands of trees in the edges.

Foreground is heavily influenced by agricultural and other activities, which meet the forest and interface with it. There is no abrupt edge but a gradual transformation from field to forest.

Foreground trees on agricultural land adjacent with the forest blended to make visual connection with it.

The land feature analysis.
3. COLUMBIA MOUNTAINS. Nelson Forest Region, Kamloops Forest Region

This mountainous area contains strongly modelled, rugged and broken topography rich in rock outcrops and plenty of diversity. The scale varies from small, enclosed local valleys to broad views of large mountains. The lakes permit clear, unimpeded views to dramatic vistas. The forests contain a lot of variety due partly to their fire history. This can also mean that the second growth forest is somewhat monotonous and even in texture. As in many glaciated landscapes, the lower slopes tend to be smoother while the upper slopes are more broken. The lower slopes also contain more broadleaves and are usually the location of agriculture or settlement.

A large scale landscape where the lower slopes contrast strongly with the vigorous jagged mountain summits. There is a very strong interlock between the forest and the landform at the tree line which creates the unity in the landscape. The dramatic landscape has a strong genius loci.

The landform analysis.

The land feature analysis.
4. NORTHERN AND CENTRAL PLATEAUS AND MOUNTAINS. Prince Rupert Forest Region, Prince George Forest Region.

This is a highly diverse area that can be broken into sub areas. The general character is that of massive dissected and rugged landforms containing major valleys and lakes. The mountains often rise well above the tree line. As the landscape is often extremely remote, there are large scale patterns of natural disturbance such as fires while human influences are largely confined to accessible areas which remain limited.
5. ALBERTA PLATEAU. Prince George Forest Region.

The landscape of this region belongs to the Great Plains of the Canadian shield. It is the only part of British Columbia to the east of the Rockies and therefore has a distinct character. Landform is gently rolling to flat with some areas of agricultural land but also extensive forest of low diversity. Views can only be obtained from occasional higher places. Kettle hole lakes and incised streams provide local variety. In many instances views of the landscape are limited to the edges of the roads.

A broad panorama of an almost flat to gently undulating landscape. The monotonous dark green forest is broken only by small lakes or human activity such as oil drilling areas and pipelines.

The land feature analysis.
6. ROCKY MOUNTAINS AREA. Prince George Forest Region, Nelson Forest Region

The landscapes of the Rocky Mountains are some of the largest scale, with very high peaks, massive, dramatic, muscular landforms and active glaciation. Many parts of the area count as the most scenically impressive in Canada and are designated as National or Provincial Parks. The landforms are typically smooth with some long slopes rising to the rugged tree line. The valley sides are broken with hanging valleys or side valleys, avalanche slides and patches of aspen following fires. Such is the scale that in parts, the operable areas of forest are high up above the valley floor though still well down below the summits. The width of the valleys, such as the Robson Valley, mean that these forested slopes are highly visible. The lack of landform on the slopes makes design difficult unless vegetation changes are present.

A medium to large scale, highly diverse landscape ranging from vegetation patterns dominating the lower slopes to the upper tree line and bare summit, craggy and broken together with the avalanche track dominating the upper slopes. Vegetation patterns partly relate to landform but also follow old fires. There are plenty of clues to the designer.

The landform analysis.

The land feature analysis.
A big scale landscape where diversity is confined to the back and foreground areas. The remainder has a low visual absorption capacity and presents few clues to the designer.

The landform analysis.

The land feature analysis.