

Visual Design Applications



Nelson-Kootenay Lake
Nov.5, 2014

Visual Landscape Design

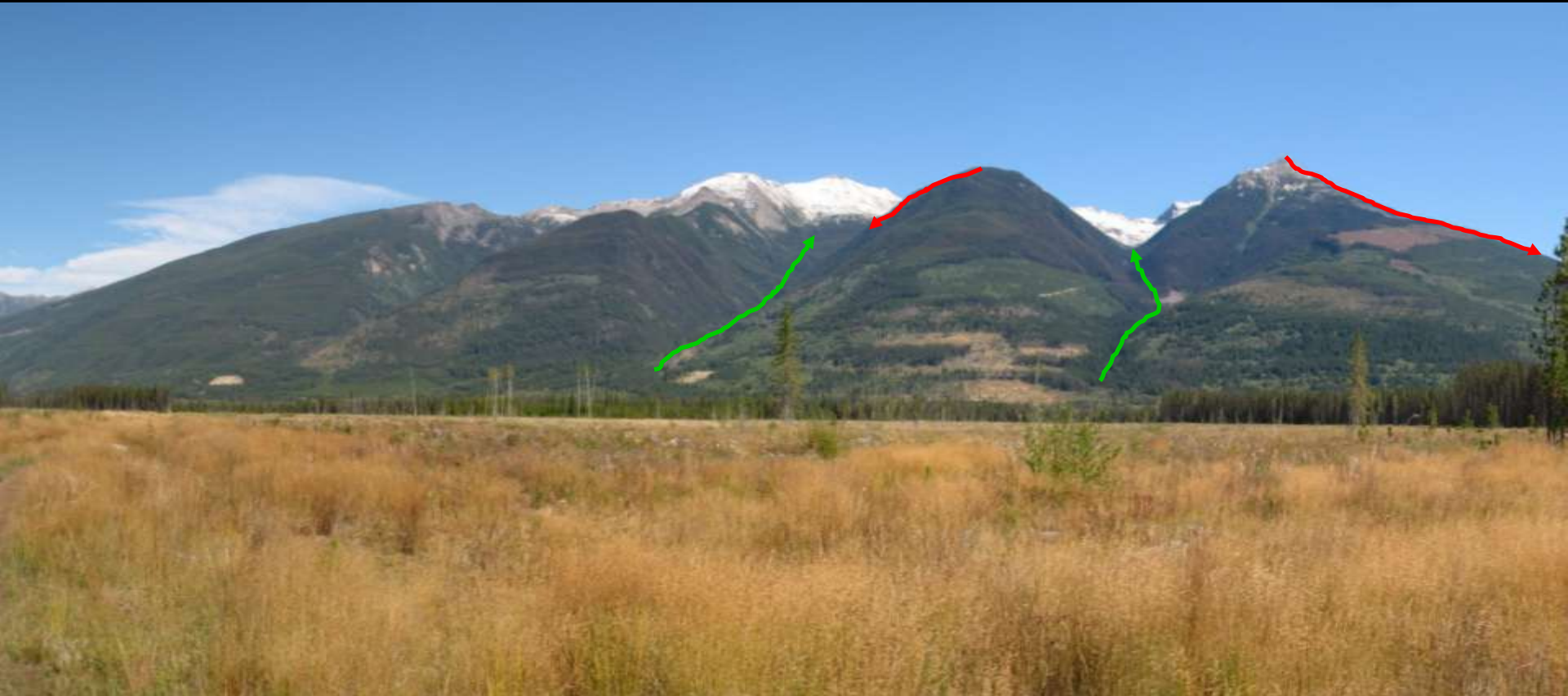
Landscape Character Analysis

```
graph TD; A[Landscape Character Analysis] --> B[Land Form Analysis]; A --> C[Land Feature Analysis];
```

Land Form Analysis

Land Feature Analysis

Land Form Analysis

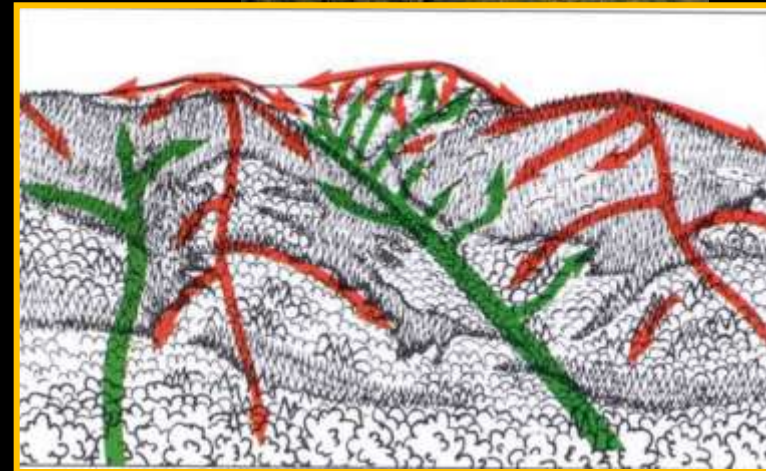
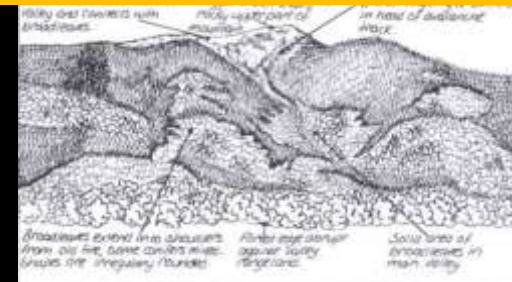


The lines of force concept is based on the premise that as we observe the landscape, our eyes are drawn along edges, following the 3 dimensional form of the landscape. Unique and contrasting elements also draw attention.

Visual Landscape Design

Visual Force Analysis:

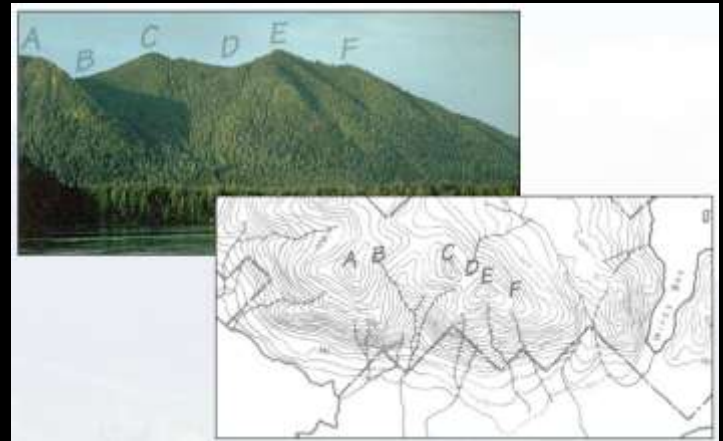
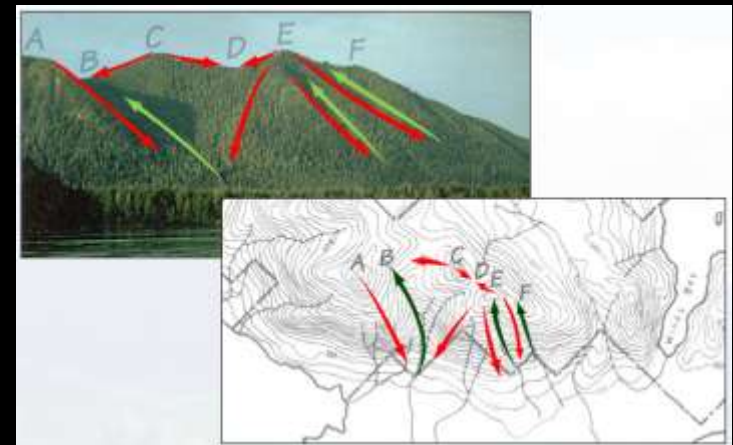
- ▣ Landscapes are three-dimensional, and when we design roads and cutblocks it is important to “fit” them onto these forms (not just shapes on a map).
- ▣ Visual force analysis is based on the way in which we observe the landscape. Our eyes travel along edges (perceived or real) and generally move up concavities (draws) and down convexities (ridges).
- ▣ Visual force analysis is an important criterion used to assess whether an alteration has been well designed.



Visual Landscape Design

Visual Force Analysis cont'd:

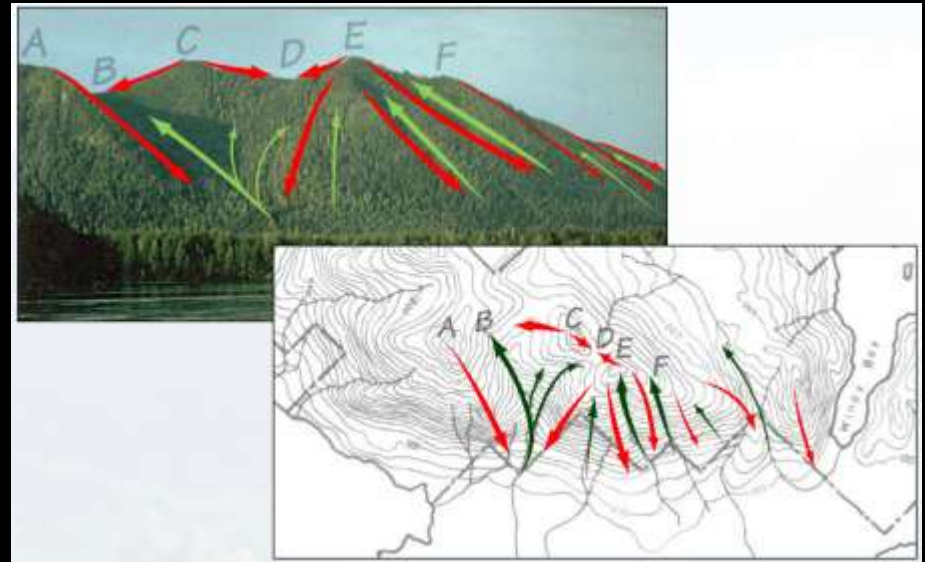
- ▣ Identify and label major peaks, summits, ridges and saddles on both the photograph and topographic map. These landmarks will help make the transition between photo & map easier.
- ▣ Start on the photograph and map out the convexities (ridges) and concavities (draws). Identify the strongest ones first. Use **RED** arrows to point down ridges and **GREEN** arrows to point up draws.
- ▣ Ensure arrows follow the apexes of ridges and the bottom of creek draws as far as they can be seen and traced. As a line is mapped on the photograph transfer it to the topographic map and vice versa.



Visual Landscape Design

Visual Force Analysis cont'd:

- Once the primary ridges and draws have been mapped with thicker lines, secondary ridges and hollows can be identified with thinner lines.
- In most landscapes a dendritic branching pattern will emerge. This will often consist of a hierarchy of 2 or 3 levels, shown by different widths of arrows.



Visual Landscape Design



Visual Force Analysis: Yoho Bridge

Visual Landscape Design

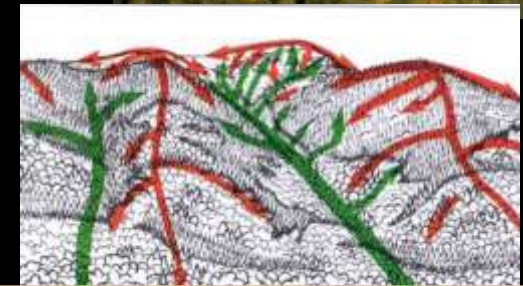
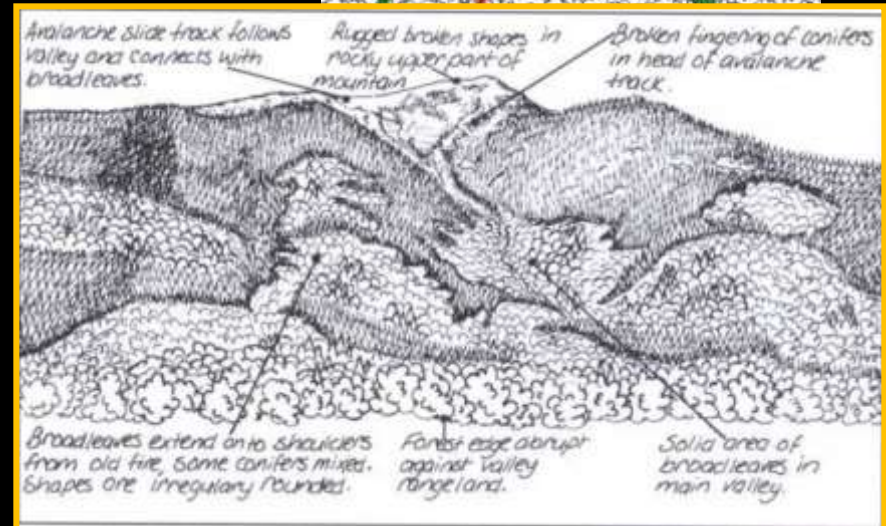


Visual Force Analysis: Yoho Bridge

Visual Landscape Design

Feature Analysis:

- ❑ A feature analysis identifies natural and man made features and patterns which can help guide design.
- ❑ Natural openings, rock outcrops, and vegetation types all create natural patterns and textures that can be used as a design template.
- ❑ Features may act as constraints and/or opportunities. Identifies where current alterations may be a problem.



Visual Landscape Design



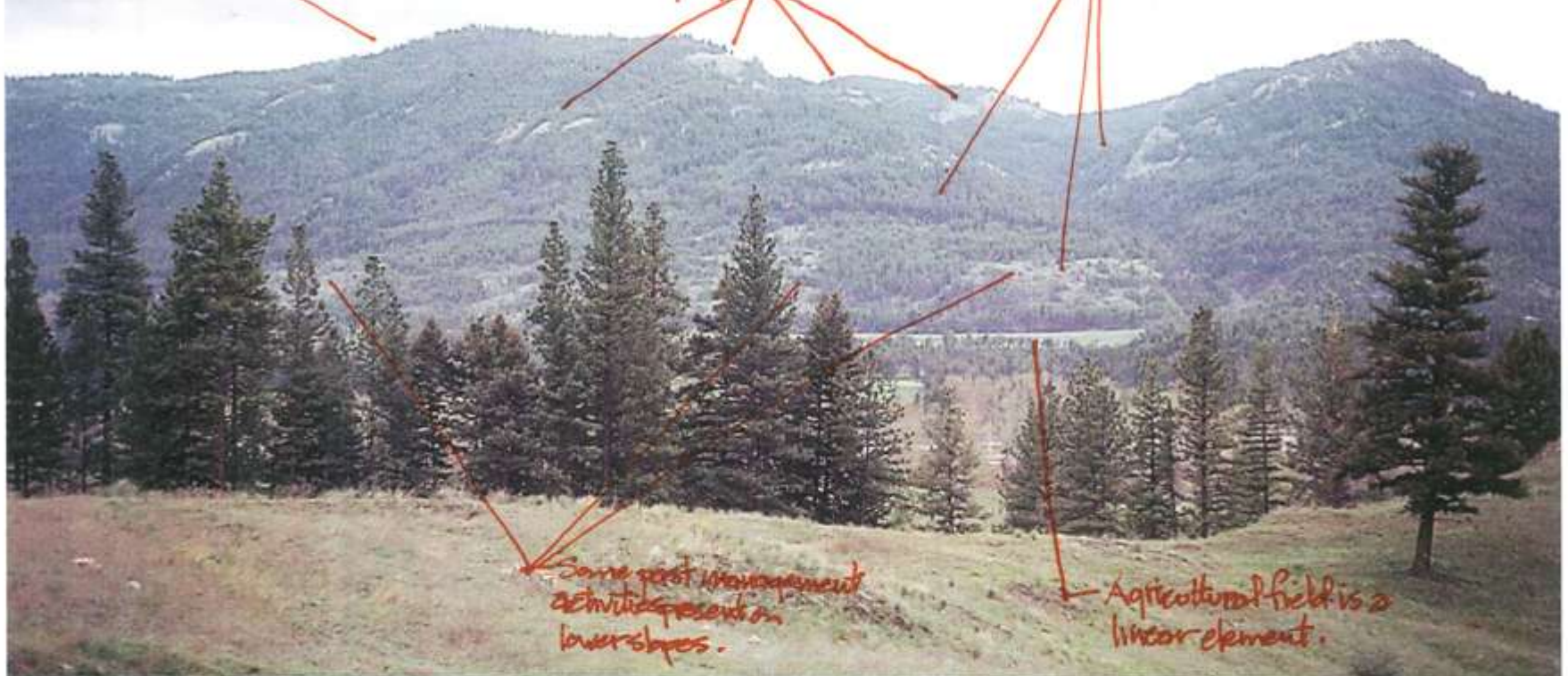
Feature Analysis: Midway

Visual Landscape Design

Landforms are medium scale and rounded.

Natural openings are small scale and numerous, often occurring on knolls and in groups.

A range of textures is present, from fine to coarse.



Some forest management activities present on lower slopes.

Agricultural field is a linear element.

Feature Analysis: Midway

Visual Landscape Design

Visual Design (definition):

- ▣ The organization of a place in a way that reconciles the conflicting requirements of use while ensuring an aesthetic appearance (generic definition).
- ▣ Understanding and working in harmony with natural characteristics of the landscape when planning development activities, so that aesthetic, environmental, and economic needs are integrated (natural resource definition).

i.e. To create alterations that blend with the natural landscape.



Visual Landscape Design

Following design principles *should* result in natural appearing openings:



Square Donut



Postage Stamp



Piano Keys

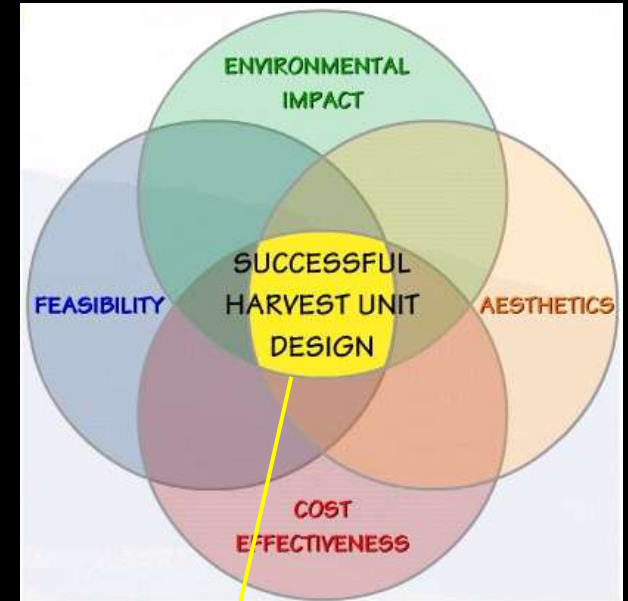


Roast Turkey

Visual Landscape Design

Visual Design Process:

- ▣ **Management Objectives:** Determine management requirements for the area of forest land.
- ▣ **Inventory:** Collect data on forest types, resource values, access, harvest feasibility, etc.
- ▣ **Analysis:** Do landscape character analysis, identify resource zones, examine constraints & opportunities for development.
- ▣ **Design Concepts:** Test layout ideas, integrating requirements and concerns, Use simulations to show options as they might appear to the viewer.
- ▣ **Final Design:** Select option that optimizes objectives and requirements – aesthetics, environment, economic, feasibility.



**Aesthetic, Functional,
& Cost Effective**

Visual Landscape Design

Shape:

- Alterations should borrow from naturally occurring line, form, colour and texture.
- Openings that follow visual force lines will “fit” onto the landform.
- Openings with irregular boundaries and soft edges will appear more natural.
- Openings with leave trees, clumps and/or patches will appear more natural.

Natural Shape:



Geometric Shape:



Visual Landscape Design

Scale:

- In order to appear natural, alterations must be in scale with natural landscape features.
- Landscape cues include landform, vegetation openings and rock outcrops, distinct vegetation patterns, and micro-terrain.

In scale with natural features:



Out of scale with natural features:

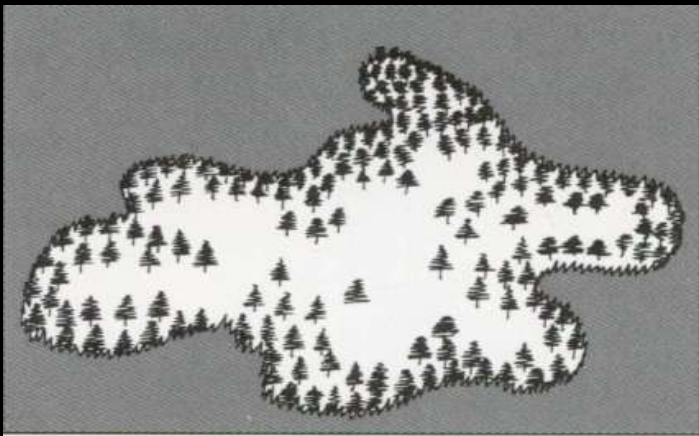


Visual Landscape Design

Edge:

- Soft edges are much more common in nature than hard edges.
- Edges can be softened through both scalloping and feathering.
- Reduce density of trees into the block to feather edge.
- Retain tree patches on drier exposed slopes and remove tallest trees of least windfirm species.
- Forest types that are dense with low live crown ratios and/or have windthrow issues may be challenging.

Varying tree density:

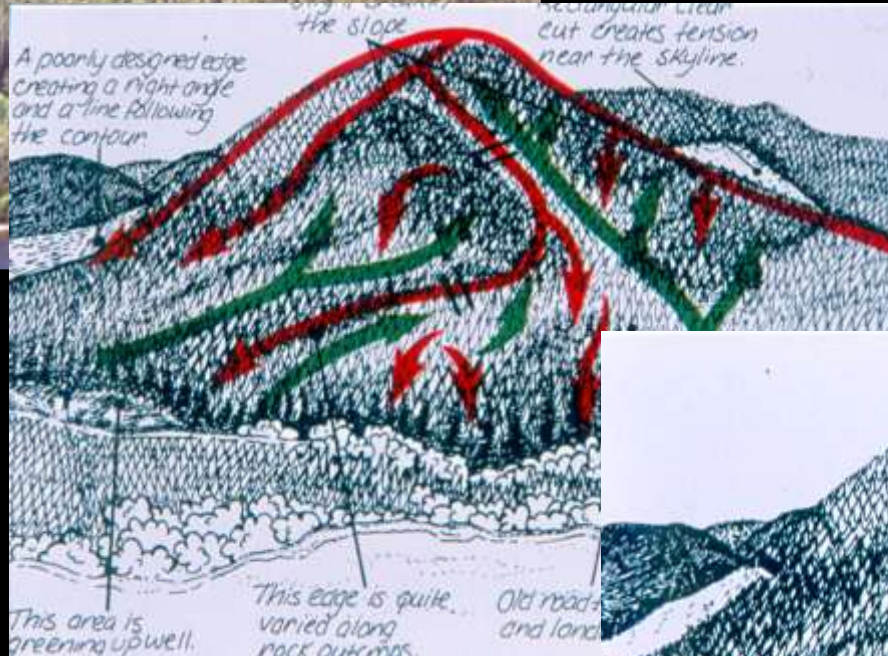
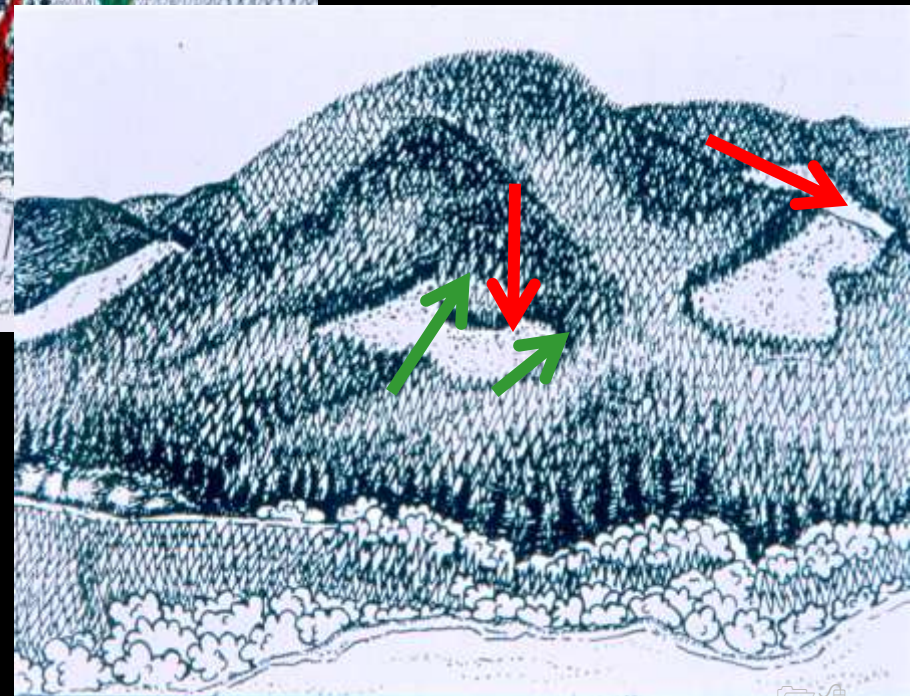


Feathering & scalloping:

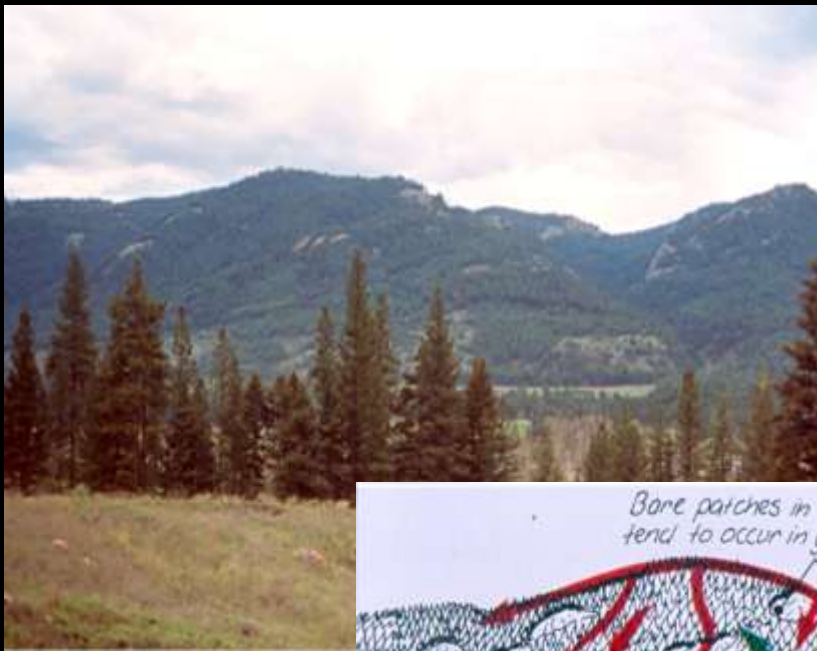




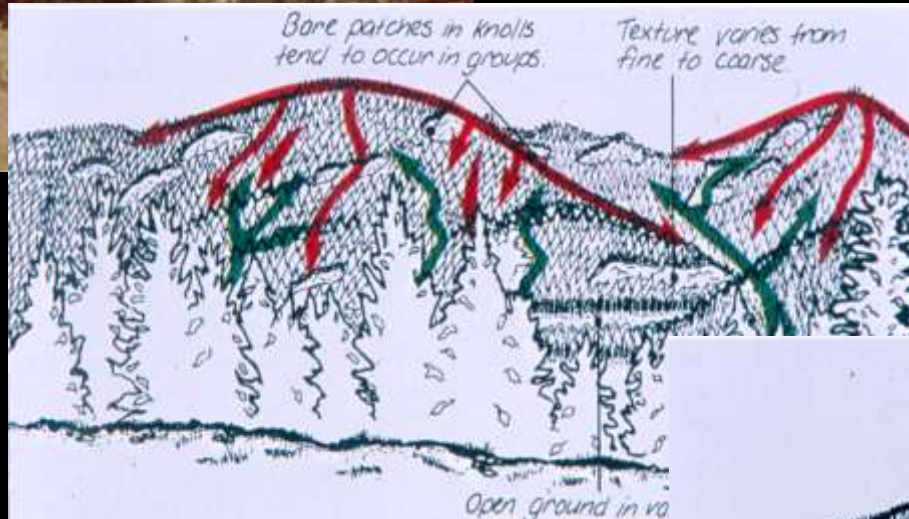
A landscape of rounded landforms.
Key creek draw in center to be protected.
Compatible shapes would be organic and curvilinear in appearance.



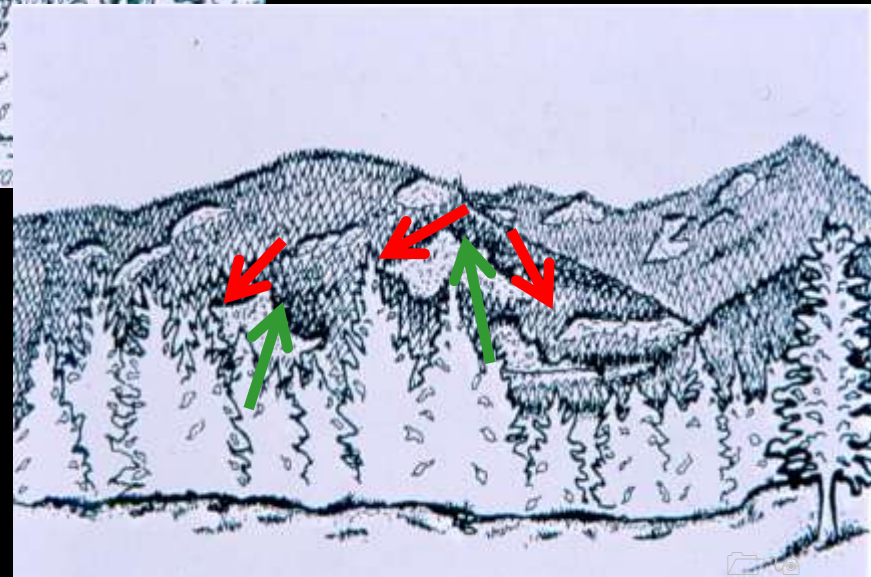
Two clear cuts are proposed asymmetrical in shape and size but responding to Lof.



A rounded landscape with many natural openings in the forest canopy providing textural variation and a moderate VAC.



Harvest units are positioned in hollows, are curvilinear in shape and make use of interlock for a good fit.

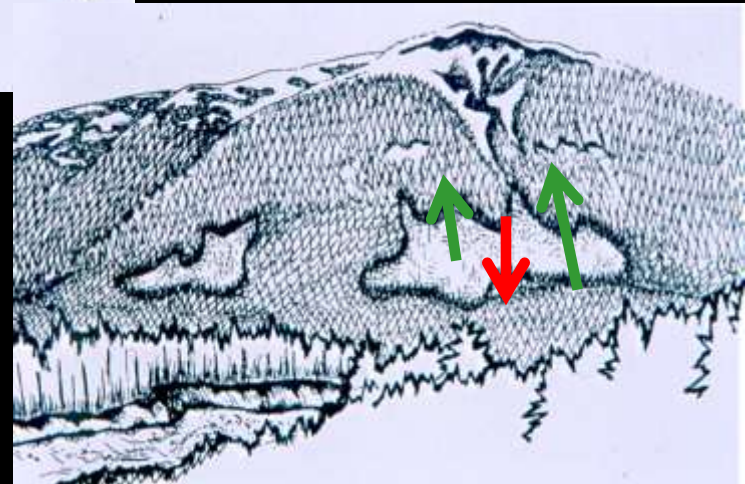




Retrospective character analyses can be used to determine what shapes would have worked better in some landscapes.

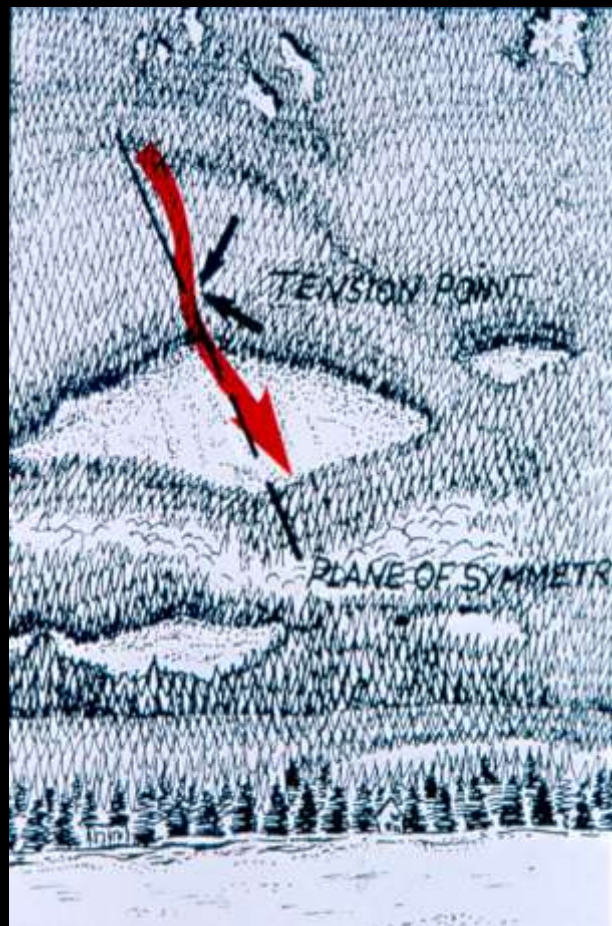


This solution suggests that two asymmetrically sized units may have worked better

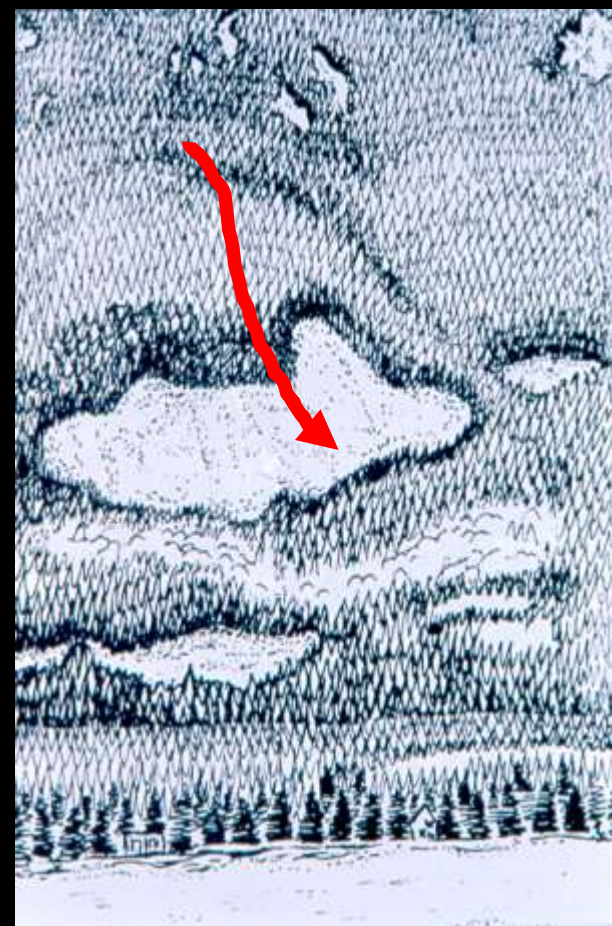




Here we have a strong convex Landform (Ridge) with an inappropriate shape contravening the LoF.



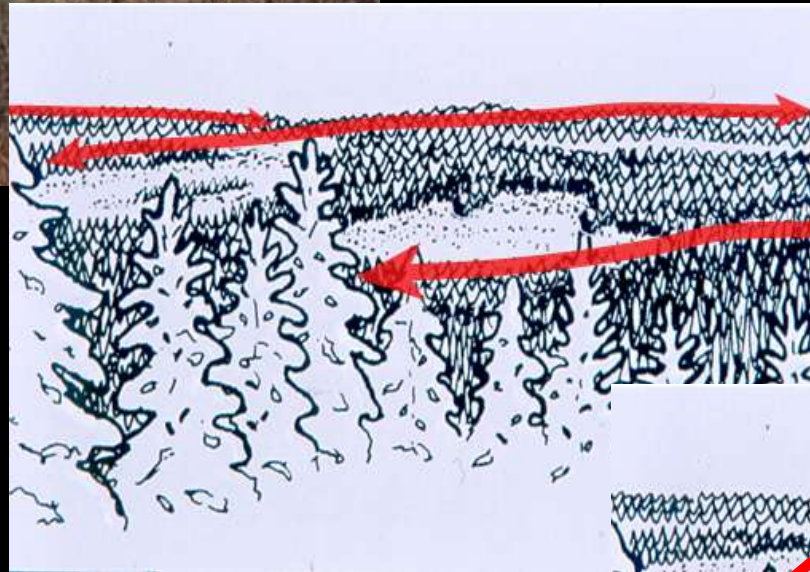
Land form Land Feature Analysis



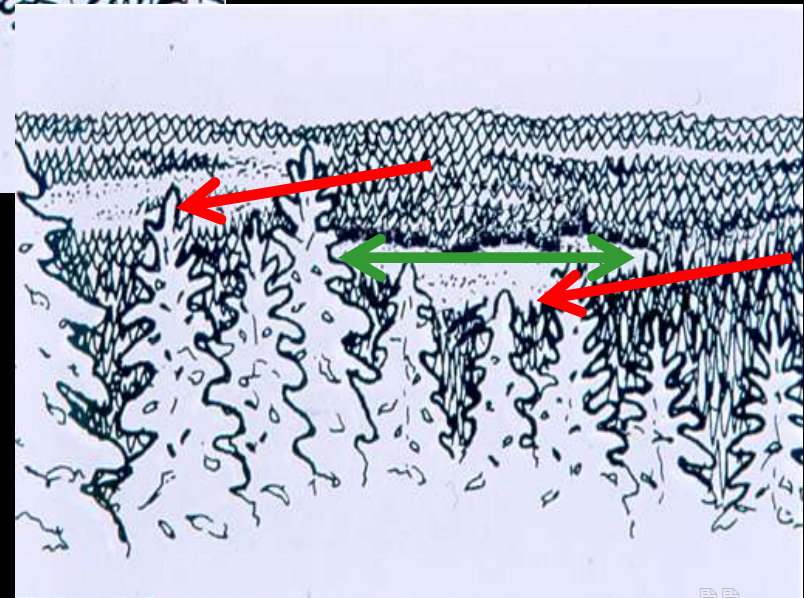
A better solution would have been a more curvilinear shape responding down on the strong ridge line.



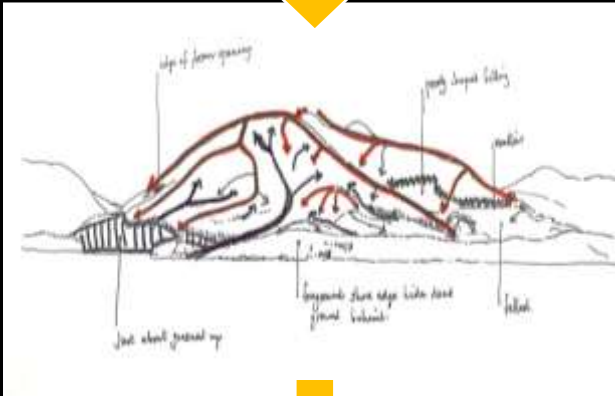
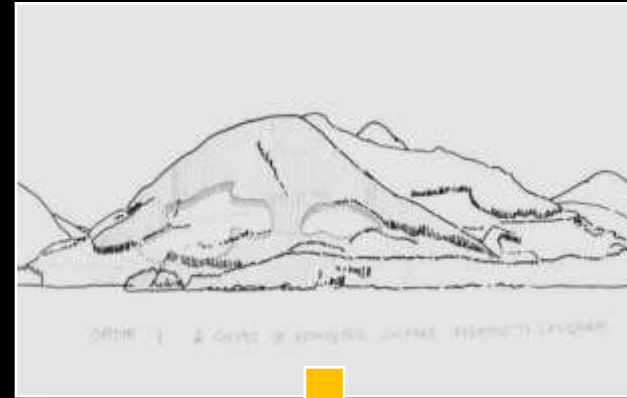
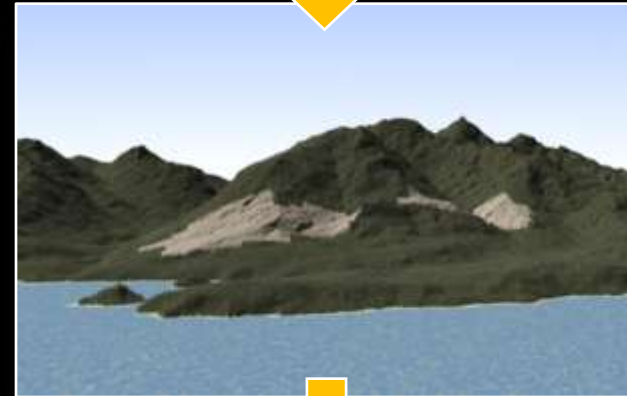
In the Cariboo the landscapes are flat and the LoF are more horizontal. The rectilinear block in the centre is blocky and a awkward fit in this landscape.



A lower relief block which pushes out in the direction of the LoF fits the landscape much better.



Marvinas Bay: Design Case Study



Visual Landscape Design

Golden Rules of Design:

Use curvilinear lines over straight horizontal and vertical lines.

Start low and to the sides on a landscape for first entry.

Work from large scale to small scale when designing units.

Shape is more important than scale if trade-off is necessary.

Use rounded shapes in rolling topography and spiky shapes in steep topography.

Vary the distribution and spacing between blocks.

Vary texture by introducing small blocks or by partial cutting.

Use mapped lines of force to help generate block shape(s).

Make use of interlocking shapes to improve fit.

Reduce figure - ground issues by avoiding shape & colour contrasts.

Protect Genius Loci (unique sense of place).

Use asymmetric balance rather than symmetry.

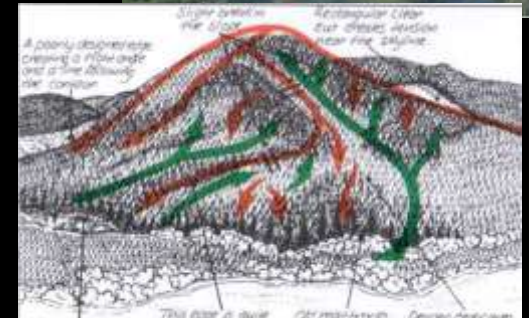
Visual Landscape Design

Cutblock Design Exercise:

Carry out quick landform and feature analysis first. Then design 1 or 2 openings on the landform.

Design Tips:

- Use visual force lines to guide block design.
- Emulate shape and scale of natural features.
- Create asymmetric (not symmetric) shapes.
- Use curvilinear, irregular lines rather than straight horizontal or vertical lines.
- Develop organic, interlocking shapes rather than geometric shapes.



Visual Landscape Design



Cutblock Design: Nahmint Lake

Visual Landscape Design

1993



1994



1999



Visual Landscape Design

Complete Pattern of Shapes:

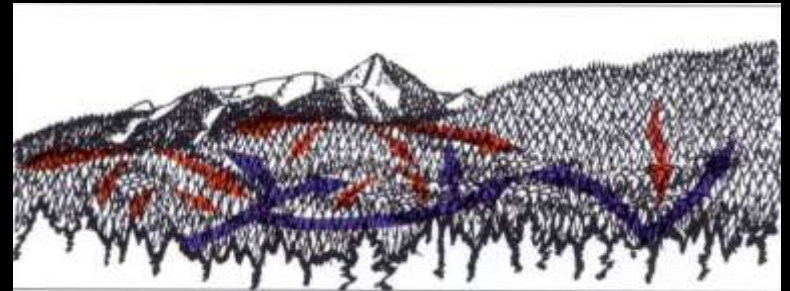
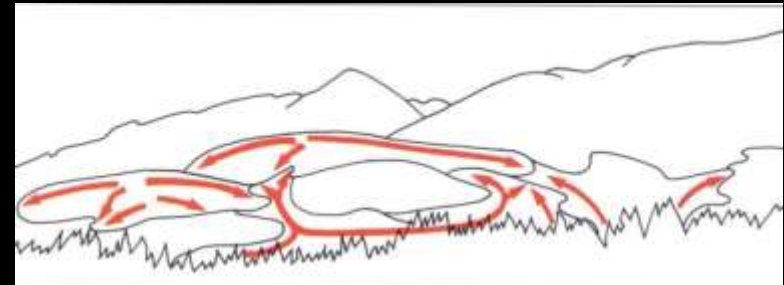
Assess the Landscape:

- ▣ conduct landform and feature analysis
- ▣ Look at forest types, operability, reserves, and other considerations



Design the Pattern of Shapes:

- ▣ identify the major patterns revealed by the landform analysis.
- ▣ design large scale, first order units such as boundaries between forest types, operability, and riparian areas first.
- ▣ design the landforms into a series of well scaled units.
- ▣ subdivide areas into smaller scale units if required based on forest types, micro-terrain, etc.

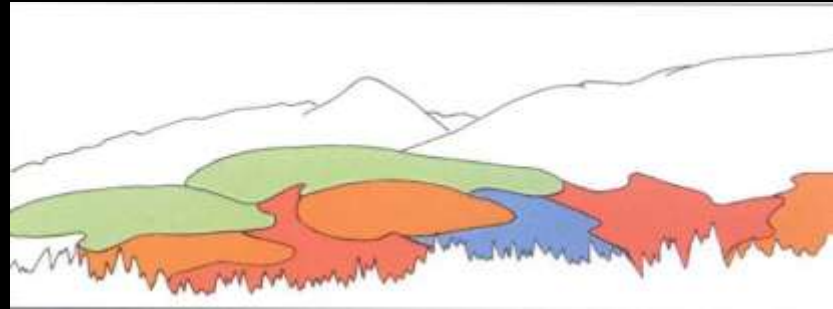
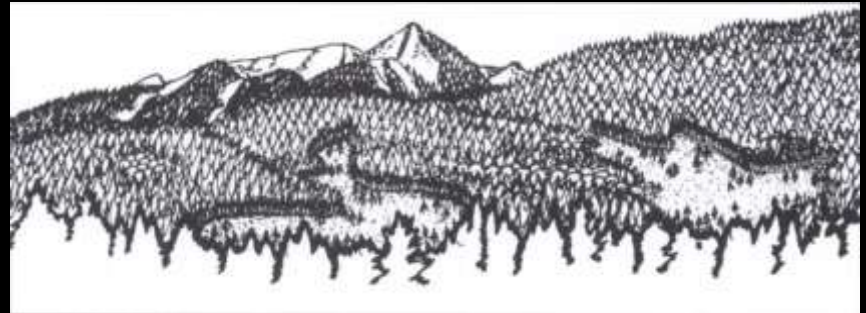
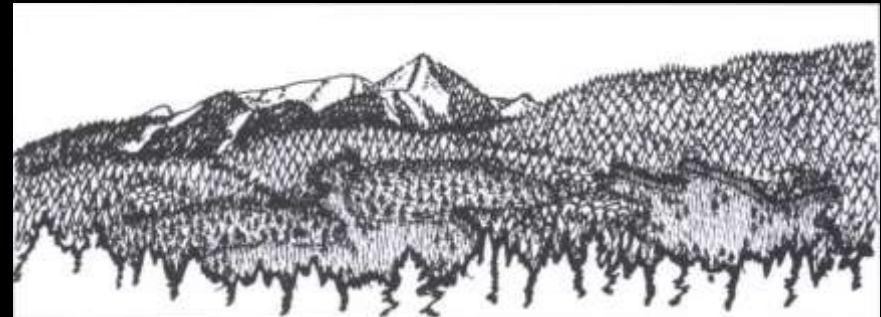


Visual Landscape Design

Complete Pattern of Shapes cont'd:

Assess the Shapes & Pattern:

- ▣ Incorporate silviculture system considerations.
- ▣ Check shapes for adherence to design principles such as interlock, balance, proportion and scale.
- ▣ Try to minimize symmetry, tension, interval, parallel and geometric effects.
- ▣ Check block shapes and pattern for operability, accessibility, wind firmness, and other practical considerations.



Visual Landscape Design



Exercise: Complete Pattern of Shapes

Visual Landscape Design

FREP Sample DVA-002



Visual Quality Objective = PR 3.9% altered moderate to good design Conclusion PR Achieved

Visual Landscape Design

Advantages of Visual Design:

- ▣ Design is a structured, rational method of evaluating the characteristics of a landscape and a means for using that knowledge to design alterations that are integrated with its landscape setting.
- ▣ The practicalities of implementing the design are accounted for during the process, not afterwards.
- ▣ The perspective design technique provides an direct way of evaluating visual impacts and enables communication of the visual design to the public in a manner that maps and plans cannot achieve.

Visual Landscape Design

Advantages of Visual Design cont'd:

- The design is based on a deep understanding of the long term and permanent features of the landscape. This ensures the plan is less likely to date.
- Using landform as a basis for shaping alterations is viewpoint independent. This means that new viewpoints that may arise are already catered for, while not hiding activities is made a virtue.
- The design process permits a wide range of values beyond visual values to be accommodated. This resolves many conflicts and helps greatly in implementing the wide range of guidelines and standards currently required.

Visual Landscape Design

Challenges of Visual Design:

- ▣ **The landscape is viewed from a different perspective:** from the large scale down to the site. This takes some getting used to.
Some methods of doing things on the ground: harvest systems, block layout, use of alternative silvicultural systems, etc. need to be reviewed and developed with the layout and management of irregular units in mind.
- ▣ **Long term thinking is required:** rather than the 5 year development period we focus on, 40, 50 or even 100 year time frames need to be considered.

Familiarity with new approaches and tools is needed:

working in plan and perspective simultaneously, using panoramic photographs and using multiple resource values to assist in block shaping requires skill.

Visual Landscape Design

Costs of Visual Design:

- ▣ More planning is required early on in the process.
More people will be working together. This costs more money for planning in the short run. However, in the long run, design may save money on time to achieve approvals, implementation, public processes, loss of flexibility, etc.
- ▣ More technology is required: GIS capabilities, computer aided design, camera equipment are necessary.
- ▣ Block layout on the ground may cost more due to the complexities of irregular shapes. However, as each unit fits with the next, mutual boundaries progressively reduce the amount of layout as passes proceed.

Visual Landscape Design

“The landscape we see is not a picture frozen in time only to be cherished and protected. Rather it is the continuing story of the earth itself where man, in concert with the hills and other living things, shapes and re-shapes the ever changing picture which we see. And in it we may read the hopes and priorities, the ambitions and errors, the craft and the creativity of those who went before us. We must never forget that tomorrow it will reflect with brutal honesty the visions, values and endeavours of our own time, to those who follow us.”

Seen at Tebay Motorway Services, October 1992.