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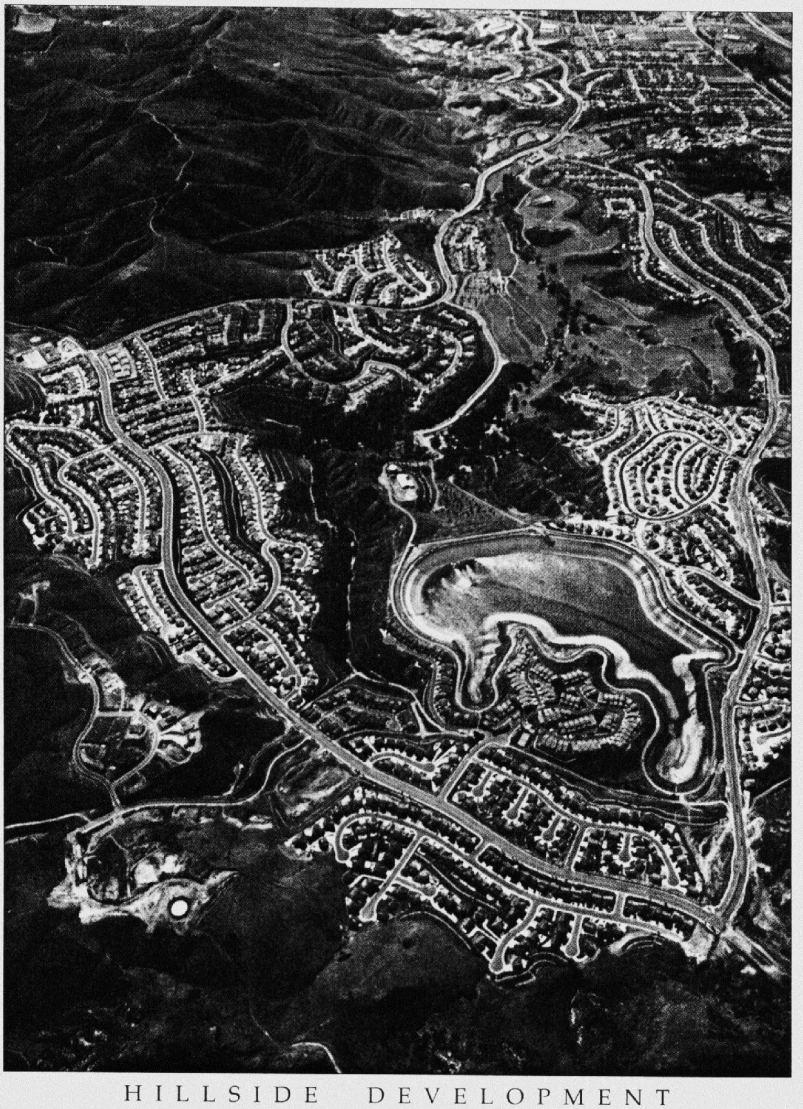
LANDSCAPE ARCHITECT

AND SPECIFIER NEWS



HILLSIDE DEVELOPMENT

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Landform Grading:

Comparative Definitions of Grading Designs

by Horst J. fchor

The advantages and necessities of hillside living have becnme more widelv evident as flatlands, the traditional building sites, are being consumed rapidly by urban development.

Hillside building, while appealing to the consumer, can require massive grading that may become the focal point of local resistance, thus impending government approval.

However, grading is a necessity to accommodate street and building areas for development, meeting building codes, and safe engineering practices. Grading is also frequently required to correct unstable soils and geologic conditions inherent in many natural hillsides.

The innovative "Landform Grading and Revegetation" concept was conceived to solve negative impressions gained in viewing the typical re-manufactured hillsides using conventional planning, engineering and construction methods. Conventional grading drastically alters a landscape, remanufacturing natural forms and shapes and plant distribution patterns to replace them with artificial, sterile and uniform shapes and patterns.

The concept, as developed and described here, consists of three components:

- Grading
- Drainage Structures
- Revegetation/Landscaping

Grading

In recent years attempts have been made by some to design and construct "LANDFORM grading," while in reality, these efforts can only, at best, be described as contouring or rounding of slopes. Therefore it is necessary to establish proper definitions and characteristics for the three types of grading available: Conventional, Contour and Landform Grading.

Comparative Definitions of Grading Designs

Conventional Grading

- Conventional graded slopes are characterized by essentially linear, planar slope surfaces with unvarying gradients and angular slope intersections. The resultant pad configurations are rectangular.

- Slope drainage devices are usually constructrd in a rectilinear configuration in exposed positions.

- Landscaping is applied in random or geometric patterns.

Contour Grading

- Contour-graded slopes are basically similar to conventionally graded slopes except that: the slopes are curvilinear rather than linear, the gradients are unvarying and profiles are planar, transition zones and slope intersections have generally some rounding applied. Resultant pad configurations

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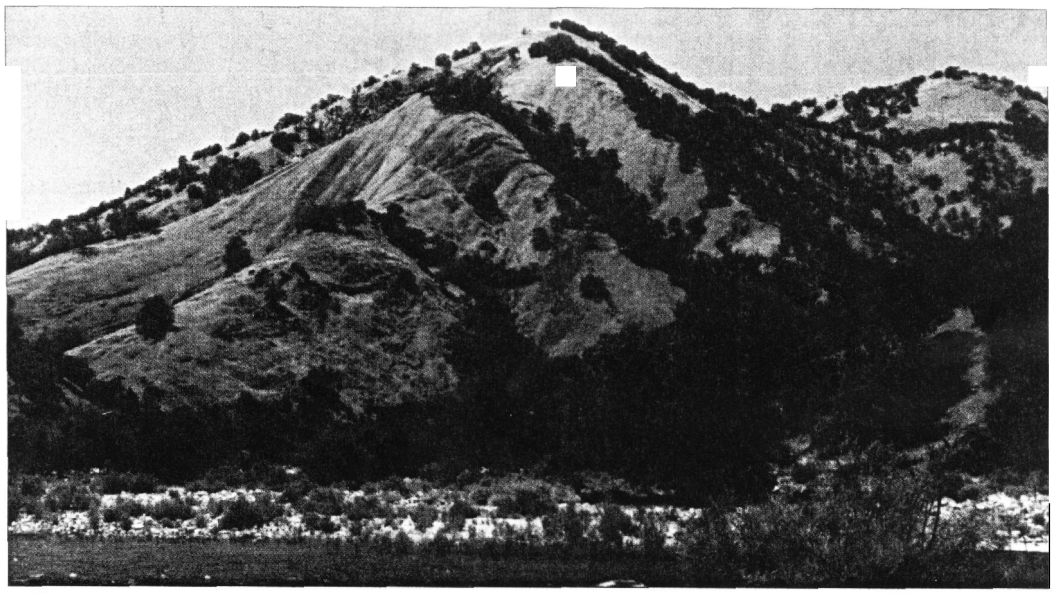
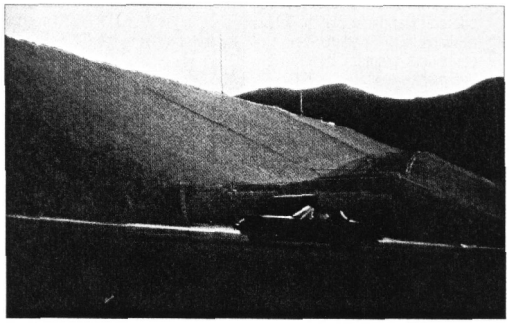
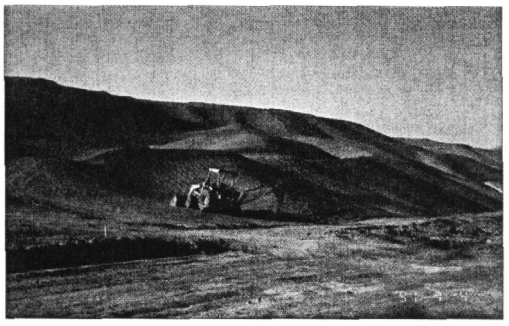


The natural hillside above illustrates that vegetation clusters in the swales of the mountain. The goal of landform revegetation is to replicate these natural patterns.



As opposed to the rigid forms of conventional grading (below left), landform grading (below right) provides shadows, depth and a more natural looking hillside.



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while convex portions are planted mainly with ground covers.

Revegetation/Landscape

Historically, landscaping on manufactured slopes has been applied in uniform patterns, with trees typically spaced 15 feet on center and shrubs 3 feet on center to achieve what has been known in the industry dubiously as "Uniform Coverage."

It is this uniformity that can add to the artificial, man-made **look,** already created by the uniformity in grading.

In the "Landform Grading and Revegetation" approach, landscaping is applied in patterns that occur in nature.

The approach should be thought of as "Revegetation". Trees and shrubs require more moisture, so it makes sense to cluster them in the swales and valleys where moisture concentrates and evaporation is minimized. Shrubs are heavily concentrated along the drainage flow of each swale and thinned to each side to minimize any erosion.

The result of "Revegetation" is a landscape that does not **look** "man-made," and, where plant material locations and distributions serve a purpose and make sense.

"Revegetation" in combination with landform grading reduces irrigation's needs: radial drainage patterns that concentrate runoff in concave swales provide the most moisture to plant types that need the most. Flatter slope ratios in swales near the lower half of the slope slow water velocity and thus allow better absorption by plant roots.

Conclusion

Hillside development can be done in an aesthetically pleasing manner. Landform-grading and landform revegetation are just two concepts that accomplish this goal. With sensitivity, creativity and the will to improve, we can shape our hillsides by imitating mother nature to recreate a more "natural" habitat for all.

Horst Schor is the principal of H.J. Schor Consulting, Creative Concepts in Land Development, in Anaheim, California. LASN

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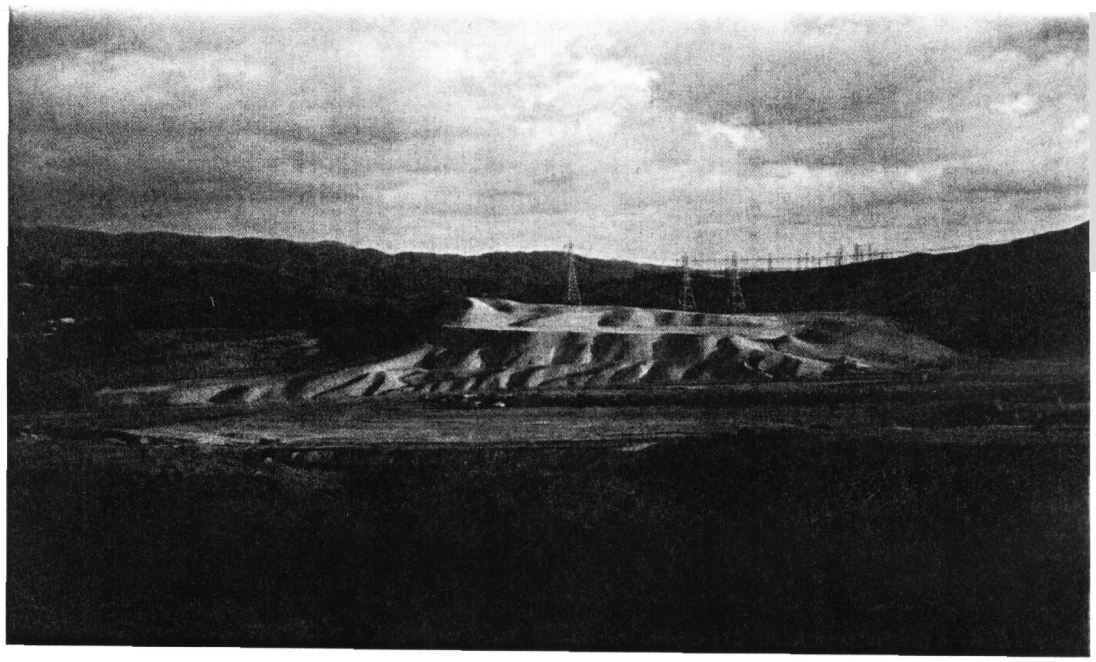
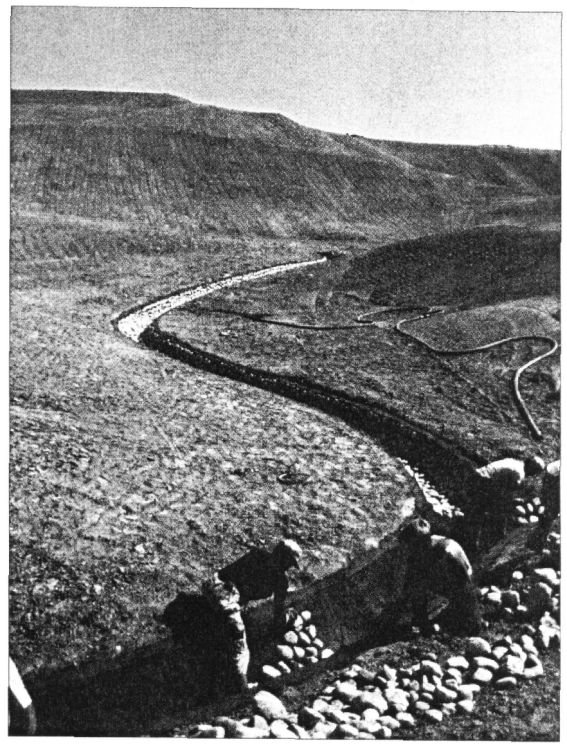


The aerial photo to the left sham a *4.100* acre planned community In which the design revolves around the landform gmding and revegetation concept.

The hill above illustrates how landform grading replicates the irregular shapes of natural slopes. The landscaping will be a "revegetation' process emulating the patterns of natural growth.

In high visibility arms. concrete drainage devices are lined with natural river rock to create a stream bed effect (right) in the finished landscape.



are mildly curvilinear.

• Slope drainage devices are usually constructed in a geometric configuration and in an exposed position the slope face.

• Landscaping is applied in random **or** geometric patterns.

landform Grading

• Landform Grading replicates the irregular shapes of natural slopes, resulting in aesthetically pleasing elevations and profiles. Landform-graded slopes are characterized by continuous series of concave and convex forms interspersed with mounds that blend into the profiles. Non-linearity and varying slope gradients are significant transition zones between man-made and natural slopes. Resultant pad configuration are irregular.

• Slope down-drain devices either follow "natural" lines of the slopes or are tucked away in special swale and berm combinations to conceal the drains from view. Exposed segments in high visibility areas are treated with natural rock *(see right photo).*

• Landscaping becomes a "revegetation" process and is applied in patterns that occur in nature. Trees and shrubs are concentrated largely in concave areas,

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