There were several concepts in the beginning of this project which lead to the major decisions that were made.

These concepts involved the location of the complex and the activities which would be taking place there. Major issues were: inside to outside relationships; rock formation found on the site and modules formed by the rocks; the impact made by the building; the impact of parking on the site view; complex acting as an entrance; terrace circulation; sectional relationships.

After careful consideration these concepts were formed into building concepts which evolved into the final design of the Serra da Canastra National Park Complex.

The main building concepts formed were: building geometry eludes to rock formation; building evolves from modules; circulation over, through, and around complex; building bridges land form; working with landscape; allowing one to see through and perceive it as an entrance; and passive solar heat and cooling.
During schematic design, organization and building modulation were of major concern. The first approach to building organization was to physically separate the three sections so a visitor was walking in and out of buildings. Here the building was trying to become part of the landscape. A field theory was tried to divide up the complex into modules eluding to the rock formations.

In this phase the criteria for the building were broken down into steps to achieve a rational design.

The first of these steps was to define, graphically, the concept parti. This was done through space relationship diagrams, dividing the complex into three parts and space-size relationships. These spaces were intended to wrap around the hill chosen for the site.

The second step was to determine a rational circulation pattern. At this point a linear pattern with nodes or central points at the three sections with ability to branch off at any point was chosen.

The third step was to determine a modular structural grid for the complex.

Items that were not investigated were actual space, connection within sections, environmental systems, outdoor or section connections, and service access.
Visitor Center
Introduction to Park
Orientation to Park Achieved
by Views
Most Visitors Will See This
Part of the Park and Little Else
Educational Programs

Possible Location for Guest Apt. & Room

Possible Location for Guest Apt. & Room

Director
Three Section Administration

View to Garage Area

View to Garage Area

Views to Park
Views Toward CP River
EXHIBIT MUSEUM
ON MULTIPLE LEVELS
WITHIN LOBBY SPACE
RELATION OVER 500 SQ
VISITOR FACILITIES

EMPLOYEES OFFICES

SEE SECTION RELATIONS

STRUCTURAL MODULE

BUILDING TO GROUND RELATION

VOLUME

BUILDING TO SITE RELATION
POSITIVE/NEGATIVE
NORTH ELEVATION

VOLUMETRIC STUDY
NORTH ELEVATION
6 Design Development
During this phase many decisions and changes took place which brought the complex into a unified design.

Major changes that occurred are as follows:

Complex:

The three sections of the complex were brought together and physically connected into the whole. Because of a lack of knowledge of exact location of rock formations, the building was placed on the formation instead of among them and was used to bridge these formations.

With these connections, circulation now branches off a major point (entrance/lobby/reception) to other parts of the building, both horizontally and vertically.

The design organization was changed from one using a field theory to that of modules. With this system a sort of building "cookbook" was developed for hierarchy building components which could be placed in specific locations on these modules. This hierarchy consisted of a series of modules being placed in several predetermined formats. On this system of modules were placed 45° bays where all windows occurred (except for the entrance). The 45° bays extending out are utilized for both passive solar greenhouses and view area. The reversed 45° bay extending in are utilized for view entrances and exits. To this system was added a lacedwork of 45° stairs for an exterior terrace circulation. Finally, a system drainage was added, occupiers were placed at specified points to allow water to run over the complex in an undulating manner. With this drainage system the whole building becomes a rock-like waterfall.

The major material selected in this phase was reinforced concrete, utilizing aggregate from the site. The reason behind this was to achieve the same coloration as the rocks surrounding the complex.

The structural grid for the complex is based on a 2.5M x 2.5M module system. This offers adequately flexible interior and exterior spaces. A structural system of reinforced concrete slabs, load bearing walls, and columns was used in accordance with local labor ability.

The complex has the ability of being sectionally closed off. The public can be prevented from entering the administrative area or guest apartments or using their outdoor terraces. These administrative offices and apartments can have access to such areas as dining without entering public areas.

Visitor Facilities:

These spaces were organized so that there is a circulation progression by a central stair of down, through, and out of the complex. These spaces were terraced down the side of the hill, allowing rock formations to be brought into a central intersection point.
DEALING W/ WRAPPING BSL2 AROUND HILL. SCR FROM PRIVATE TO PUBLIC.

BETTER OUTDOOR TO INDOOR RELATIONSHIP. ARRIVAL FROM SOUTH. BETTER CONNECTIONS.

PROBLEMS

WHAT COMPONENTS BRIDGE, WALKING OVER BLDG, WOULD CUT
Preliminary Site Model
During this phase, the major concentration was on detailed development and a final evaluation of what was criticized at the end of development.

The decision of further standardization of parts was made. The $45^\circ$ bays were changed to two widths and two height sizes. All glass is one width and four height sizes. Interior stairs were changed to fit within the module so that the administrative stairs and the visitor facilities can be constructed the same. The exterior stairs were changed to a lace work that connects horizontal bands. This approach follows the character of the exterior better than did the stairs being placed against the $45^\circ$ bays on a $45^\circ$ angle.

Other considerations involved the general simplifying and cleaning up of the exterior and interior. Because of its form the complex will have a strong identity with the park. This simplification has helped unify the complex. The use of passive solar heating and cooling helps to co-exist with this natural environment.
8 Bibliography


Guide for Space Planning and Layout. General Service Administration, Public Building Service.


