

2003 Award of Excellence AIA Montana Design Award Recipient



Jefferson River Home

Owner and Architect:
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The home is located on the west bank of the Jefferson River near Three Forks, Montana. It is composed of a guest house, main house, garage and screened pavilion. Design considerations include;

SITE: The Jefferson River forms the edge of the property on the south and east and is excellent for fishing, canoeing and swimming. The land bordering the river is rich with vegetation and animal life. Golden and bald Eagles, Blue Heron, Osprey, Pelicans and hundreds of other types of birds frequent the river. In the winter, ice flows from cragged peaks and the river groans as the spring thaw arrives. Ravines formed by flash flooding pierce the site along a bluff which rises 75' to the west. The rolling hills above the river are dry from lack of moisture and are covered with sagebrush, cactus, junipers and natural grasses. Distant views can approach 100 miles and six mountain ranges are visible beyond the floor of the Gallatin Valley.

RESPONSE: Each plane of the house responds to a direct influence from the site. The north edge of the house forms a datum line which is linear and parallel to the existing topography. The earth is then folded in a single plane upward to form the roof's surface. The angular edges are determined by direct relationships the extended landscape. One points to the Spanish Peaks, while another opens to the eastern sunrise. The face of the guest house is exactly parallel to the rising sun on the first day of summer, while the living room wall is oriented to the setting sun on the same day.

The master bedroom wing opens to the sun rising over the Bridger Mountains in the morning and the living area experiences day light from sunrise to sunset. The house is close enough to the river to hear the sounds of water (both flowing and frozen) and yet distant enough to allow the river habitat not to be threatened. Fisherman and boaters continue to feel comfortable with our presence.

STRUCTURE: Keep it simple.

RESPONSE: Simple it is. Insulated concrete foundations support 2x6 (2x10 on north side) wall construction, wood floor joists and an EPS sandwich panel roof. The roof is a single, continuous plane that folds up from the earth.

ENERGY: Using basic principles, design the residence to minimize the use of energy.

RESPONSE: The house is buried 14' on the north face. Walls on the north side are 10" thick. All 2x6 exterior walls have 2" of sprayed Urethane and then 4" of fiberglass batt insulation. Other than glazed doors, for security reasons, only one small window is placed on the north elevation. Additional solar protection is being planned through the planting of deciduous trees and the eventual addition of solar awnings over appropriate windows. Dependant on propane gas for heating, cooking and hot water, annual bills do not exceed \$750. Without solar protection, cooling costs approach \$300. per year. Overall, the house is extremely energy responsive.

MATERIALS AND IMAGE: Goals include keeping the home as maintenance free as possible while creating a contemporary, yet appropriate residence.

RESPONSE: Being a native Montanan, I fully appreciate the drastic climatic changes and harshness of both the summers and winters on constructed shelters. Materials appropriate in most of the United States suffer badly in Montana. Winters often reach -50 degrees and exceed 110 degrees in the summer. Before designing the house, I spent considerable time considering alternative materials. In the end, it was the farmer and rancher who offered the greatest insight. Metal buildings and siding are their response to a problem which they face annually. Therefore, corrugated steel with a "galv-alum" finish became the siding, roofing and flashing. Galvanized industrial grating became the decks and aluminum "speed rail" became the guardrails. Windows were insulated glass and aluminum frames with a thermal break.

INTERIOR: Reflect the client's objectives.

RESPONSE: The interior is spacious, white, with sloped ceilings and will eventually house a number of pieces of art. The living room, dining, kitchen area is a series of planes painted white, dark grey, purple and aqua. Color plays an important part of the house, as do the intersecting planes which create interest in their variety and order. The floors are recycled maple and filled with black filler. The clients love the house...what more can I say.