

Inspiration for the use of Western Red Cedar

# THE CEDAR BOOK



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[www.wrcea.org](http://www.wrcea.org)

Centuries ago, native peoples of the Pacific Northwest called the stately Western Red Cedar the “Tree of Life.” Its natural durability and versatility made it the preferred choice for building ocean-going canoes, post-and-beam houses, ceremonial dance masks and ancestral totem poles.

And for more than a century, discerning architects and builders across North America and around the world have enhanced their projects with this beautiful and durable material. Nature still knows best for, despite all efforts at imitation, no man-made product can match the performance qualities of Western Red Cedar.

This book illustrates the attributes that make Western Red Cedar a superior design and construction material in so many applications, as demonstrated in these sample projects. Good building design improves our quality of life, and Western Red Cedar has the performance history, handling and finishing qualities to make a special, lasting contribution.

# The Western Red Cedar Story

Western Red Cedar (*Thuja plicata*) is a contemporary, yet classic building material offering beauty, versatility, and durability. No man-made material can match Cedar's beauty and centuries of proven performance. Western Red Cedar is preferred where attractive appearance, superior performance and resistance to weather are important.

Cedar is the ultimate green building material. It is legally, responsibly and sustainably harvested in the publicly managed forests of British Columbia, Canada. Less than 1% of standing timber is harvested each year. For each tree harvested, three are replanted to ensure our forests will exist in perpetuity. Western Red Cedar has the least impact on the environment throughout its life cycle. It requires significantly less energy to produce than man-made alternatives and is biodegradable.

With its low density and high proportion of air spaces, Western Red Cedar is the best thermal insulator among the commonly available softwood species and is far superior to brick, concrete and steel. This helps keep buildings cool in the summer and reduce heating costs in the winter. Cedar has a very low shrinkage factor and is superior to all other coniferous woods in its resistance to warping, twisting and checking.

Western Red Cedar's naturally occurring compounds called "thujaplicins" act as natural preservatives - making the wood incredibly

durable. Properly finished and maintained, cedar will deliver decades of trouble-free service.

There are few more versatile building materials than Western Red Cedar. For example, Western Red Cedar exterior siding comes in a spectrum of patterns. These are available in a wide range of widths and thicknesses offering further flexibility in design. Cedar siding is available in clear or knotty grades with smooth surfaced, combed or rough sawn finishes; flat grain and vertical grain. Cedar is free of pitch and with its high degree of dimensional stability it is the best of the softwoods for accepting paints, stains, oils and other coatings.

Not only does Western Red Cedar offer unparalleled performance, it is renowned for its distinctive beauty. Cedar provides an all natural beauty and warmth that cannot be duplicated by plastic, steel or composite products. A pleasing range of natural hues, tight grain patterns, and soft textures make it the choice of discerning homeowners, builders and architects.

Don't settle for anything less than the best. Western Red Cedar... specify it by name.



# On-line cedar school

AN AIA-ACCREDITED EDUCATIONAL RESOURCE

The Western Red Cedar Lumber Association [WRCLA] has launched the WRCLA Architect Cedar School, a program designed to educate architects about the properties and benefits of Western Red Cedar.

Individuals who successfully complete the course are eligible for 7.0 AIA/CES learning unit hours as well as a WRCLA Cedar School Certificate. All active AIA members must successfully complete 18 learning unit hours each year. The course covers seven training and exam modules: Forestry 101, Wood Properties, Wood Manufacturing, Products & Grading, Cedar Marketing & Promotion, Installation of Cedar, Finishing & Maintenance.

"The program was developed by industry experts to provide an in-depth, objective understanding of Western Red Cedar for architects at all levels," said Peter Lang, general manager of the WRCLA. "Even seasoned professionals will pick up new ideas and information about Western Red Cedar." The WRCLA Architect Cedar School is available online for rapid and convenient training, as well as a printed version. The program cost is \$95.

To access the architect cedar school site, visit: [www.cedar-training.org](http://www.cedar-training.org). For more information about Western Red Cedar and the WRCLA visit [www.realcedar.org](http://www.realcedar.org) or call 1-866-778-9096.

WESTERN RED CEDAR LUMBER ASSOCIATION  
REAL CEDAR | 1-866-788-9096 | [www.realcedar.org](http://www.realcedar.org)

# Cedar forest practices and certification

British Columbia, the main source of Western Red Cedar, is a leader in third-party sustainable forest management certification, with an area almost as large as the UK certified under one of three proven standards.

The three certification methods used in B.C. - the Canadian Standards Association's Sustainable Forest Management Standard [CSA], the Sustainable Forestry Initiative [SFI] and the Forest Stewardship Council [FSC] - all involve independent, qualified third-party audits that measure a company's planning, practices, systems and performance.

They all ensure that forest management promotes sustainability. They all examine how operations address a range of forest values such as biological diversity, wildlife habitat, soils and water resources. Furthermore, they all ensure that harvested areas are reforested, that laws are complied with, and that there is no unauthorized or illegal logging. Finally, all three certification methods have non-industry participants and publicly-released audit results.

Virtually every major B.C. forest company, and many smaller ones, operate on certified lands. Customers can be assured that if a supplier is issued a certificate demonstrating certification to the CSA, SFI or FSC standards, the Western Red Cedar products they supply come from sustainable and well-managed forests.

## CANADIAN STANDARDS ASSOCIATION

[\[www.csa-international.org/product\\_areas/forest\\_products\\_marking\]](http://www.csa-international.org/product_areas/forest_products_marking)

B.C. has 55 million acres certified under the CSA Standard, CAN/CSA-Z809, Canada's National Sustainable Forest Management Standard.

CSA uses a continual improvement approach and requires public participation, practical demonstration of sustainable forest management practices, and management commitment.

CSA offers a chain-of-custody audit as well as a Forest Products Marking Program so retailers, manufacturers, homebuilders and consumers can identify products that come from forests certified to the CSA standard.

## SUSTAINABLE FORESTRY INITIATIVE [SFI, INC.]

[\[www.sfiprogram.org\]](http://www.sfiprogram.org)

About 135 million acres of forest land across North America are certified to SFI, an independent, registered non-profit organization with a governance structure that has equal representation from the social, economic and environmental sectors.

The SFI Standard is a comprehensive system of principles, objectives, performance measures and core indicators, which integrate the perpetual growing and harvesting of trees with the protection of wildlife, plants, soil, water and air quality.

SFI offers a certified procurement system audit as well as an on-product label option for use by third-party certified program participants that meets Federal Trade Commission guidelines for environmental claims.

#### FOREST STEWARDSHIP COUNCIL

*[[www.fsc.org](http://www.fsc.org)]*

Availability of FSC-certified wood from B.C. remains limited since the FSC B.C. regional standard has only preliminary approval from FSC International.

FSC, an international non-profit organization, supports environmentally appropriate, socially beneficial and economically viable forest management. Its 10 overarching forest management principles and 56 criteria are used as a guiding framework for regional standards that are developed to reflect local ecological, social and economic factors.

To carry the FSC label, a product must be verified as coming from a certified well-managed forest through a chain-of-custody certification, and by meeting the FSC's percentage-based claims requirements.



## Madrona Residence

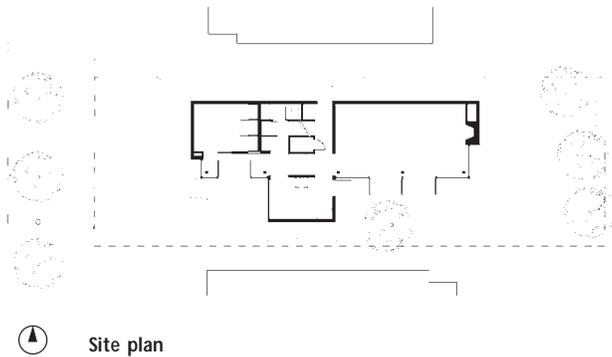
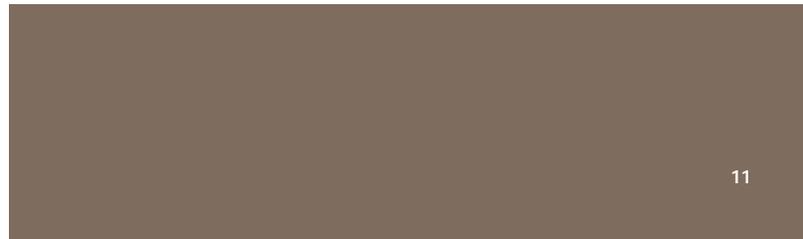
VANDEVENTER + CARLANDER ARCHITECTS

Inserted on a 35ft.-wide infill lot on a Seattle street of eclectic, traditional homes, the Madrona Residence is essentially one room wide yet packs in 3,000sf of living space. The clients requested a home filled with natural light, direct openings to a ground floor terrace and garden, and suited for entertaining.



THE TEXTURE AND NATURAL WARMTH OF CEDAR HELPS TO BLEND THE HOUSE INTO THE STREET.

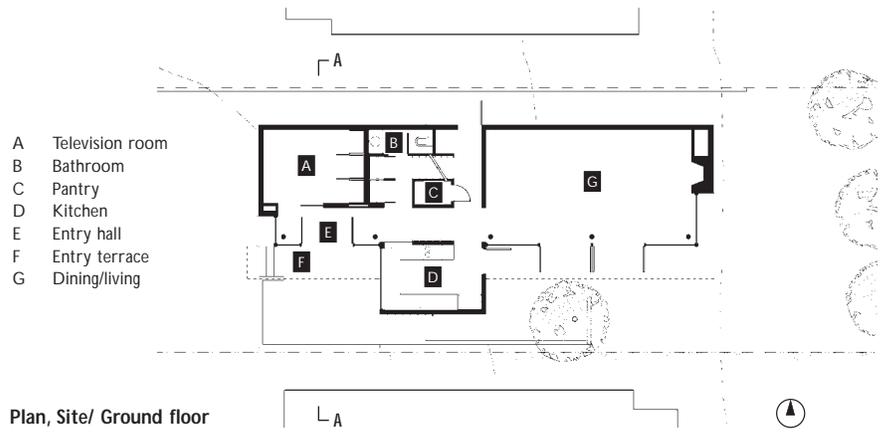
WESTERN RED CEDAR SIDING APPLIED HORIZONTALLY, VERTICALLY AND AS A SUN/PRIVACY SCREEN, GIVES THE HOUSE A CONTEMPORARY EXPRESSION.



 Site plan

Public spaces such as a combined living/dining area, kitchen and small television room occupy the first floor. The second and third floors contain bedrooms, and a home office and weaving area respectively. A third-floor roof terrace looks out to Lake Washington and the neighborhood. A compact, central stair gives efficient access to all levels.

Chosen for its beauty, affordability and ease of use, wood plays a prominent structural and finishing role. The platform frame construction uses wood-frame plywood shear walls to accommodate large glazed openings on the south elevation. Factory-stained Western Red Cedar siding is applied in three ways: horizontally as a rain screen with small gaps between courses for visual depth, vertically in a continuous flush surface, and extended out from the glazed south elevation as a sun and privacy screen. The various siding patterns give the house a contemporary architectural expression while the texture and warmth of the cedar blends the house into the street.

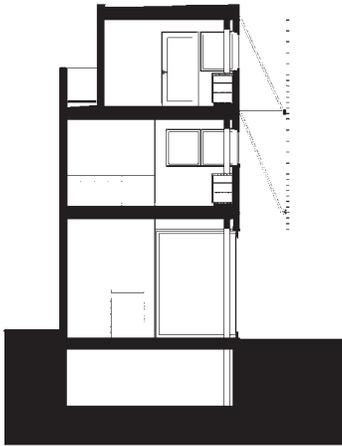


THE SUNSCREEN FRAME CONSISTS OF 2X2 X 1/8-IN. THICK TUBE STEEL FRAMES ON 3-1/2 FT. CENTERSEACH FLOOR LEVEL.



THE TOP OF THE SUN SCREEN ENDS AT A ROOF TERRACE THAT GIVES VIEWS ACROSS THE NEIGHBORHOOD.





Section A-A

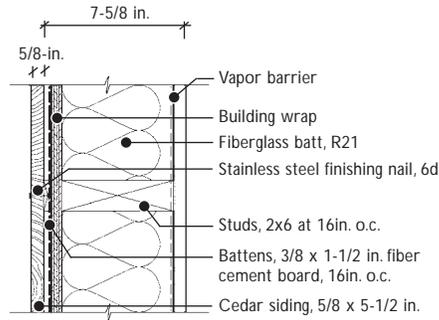
The sunscreen frame consists of 2x2 x 1/8-in. thick tube steel frames on 3-1/2 ft. centers screwed to the 2x10 joist headers at each floor level. Horizontal and vertical cedar members form the secondary frame in which horizontal cedar slats are inset.

The contemporary style continues inside with natural-color maple flooring used throughout. Much of the maple and maple plywood casework, including built-in bookshelves, closets and display space, were designed as an integral part of the architecture.

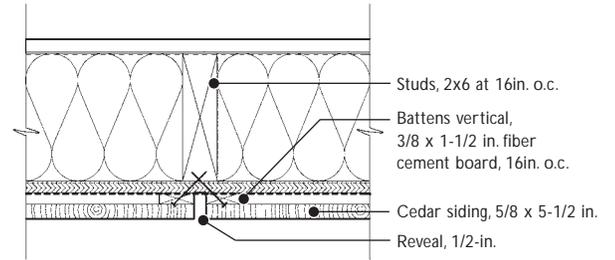
An in-floor hot water hydronic system provides heating. In addition, uneven spacing of the cedar slats on the sunscreen lets the heat of the winter sun penetrate to the ground floor. Cooling relies solely on the sunscreen and natural cross ventilation.



THE SUNSCREEN EFFECTIVELY SHADES THE SUMMER SUN, ALLOWING CROSS-VENTILATION ALONE TO COOL THE HOUSE.

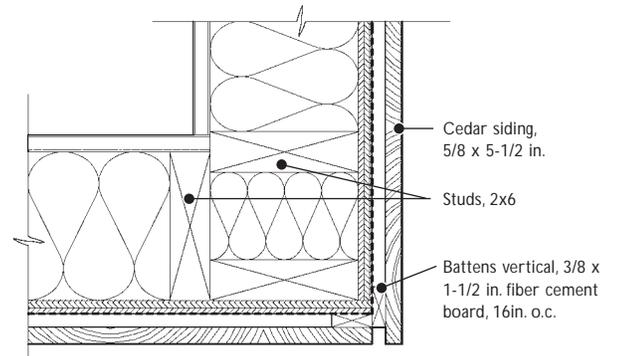


Plan, exterior rain screen wall assembly



Plan, joint at vertical cedar siding, north elevation

A LIGHT 2X2 STEEL FRAME SCREWED TO FRAMING HEADERS SUPPORTS THE CEDAR SCREEN.

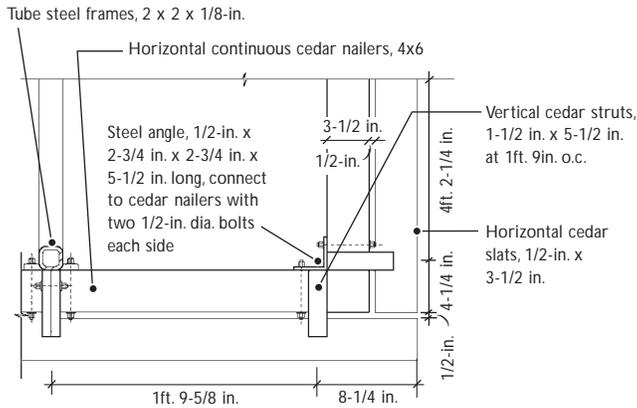


Plan, corner of exterior wall, east and west elevations

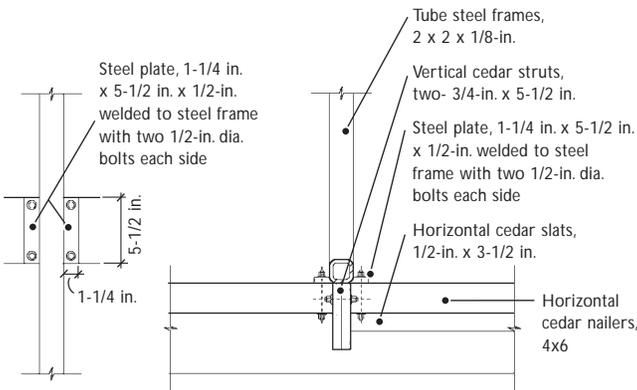
## Cedar Specs

### Exterior

Western Red Cedar siding pre-stained, vertical, horizontal and slats  
1/2-in. x 3-1/2 in.; infill fiber cement panels on glazed south wall



Plan, framing at sunscreen corner



Elevation from rear

Plan, sunscreen splice point



CLIENT Bill Way and Erica Tiedemann, Seattle, WA  
 ARCHITECT Vandeventer + Carlander Architects, Seattle, WA  
 CONTRACTOR Easter Construction, Tukwilla, WA  
 STRUCTURAL ENGINEER Swenson Say Faget, Seattle, WA  
 LUMBER SUPPLIER L.S. Cedar, Vashon Island, WA  
 PHOTOS Michael Moore, Bainbridge Island, WA



Site plan

## The Vento

BUSBY PERKINS + WILL ARCHITECTS

**The Vento is a three storey mixed use development of 39,000sf, with retail space and two affordable housing units on the ground floor, and 22 two storey suites above.**

The building is part of the first phase in the comprehensive redevelopment of a former hospital site in suburban Calgary. Implementation of the master plan for the area, known as The Bridges, is being overseen by the City of Calgary, with individual lots being developed by the private sector. Sustainable design is a key component of the City's mandate.

In this regard, the success of the Vento comes not from the application of sophisticated green technology, but rather from the careful consideration of site attributes and orientation, and to the specification and detailing of the basic building elements.

HORIZONTAL WESTERN RED CEDAR SIDING, WITH TWO COATS OF WATER-BASED FINISH, CLADS THE UPPER TWO RESIDENTIAL FLOORS.







The ground floor retail units extend almost the full depth of the site north to south, their roof slabs forming a south facing terrace for the shallower residential units above. The building's energy efficient envelope uses traditional wood frame construction with R20 insulation and high performance windows. Radiant floors and effective natural ventilation eliminate the need for mechanical heating and cooling in the residential component.

The south elevation is largely glass to maximize daylight penetration and passive solar heat gain in the winter months. In contrast the north elevation has only small window openings strategically located within a facade of composite panels and horizontal Western Red Cedar siding.

Cedar seemed a natural choice for its warm appearance and durability, but one that still needed to be proven by comparative analysis with other cladding products. The panels of horizontal T&G cedar are applied as a rain screen, with a random joint pattern for economy. V-joints between boards minimize the visual impact of shrinkage. Panel edges are formed by a 2x2 cedar stop, with a similar detail at the corners of the building.

The Vento's strategic, low tech approach has helped to demystify sustainable design and establish a new benchmark for Canada's mixed use residential and commercial sector. The Canada Green Building Council is reviewing the project for LEED certification. LEED Platinum is targeted, but has yet to be confirmed.





CEDAR CLADDING WAS CHOSEN FOR ITS LONG-TERM, DURABLE PERFORMANCE, AND FOR ITS STRONG AESTHETIC THAT IS PARTICULARLY VALUED IN THE SOUTH-FACING TERRACE AREA.



CEDAR SIDING IS APPLIED AS A RAIN SCREEN, WITH RANDOM JOINT PATTERNS FOR ECONOMY.





V-JOINTS BETWEEN CEDAR SIDING BOARDS MINIMIZE THE VISUAL IMPACT OF SHRINKAGE.





## Cedar Specs

### Materials

Siding: 1x6 Western Red Cedar Tight Knotty stock dressed siding, T&G V-Match

### Installation:

End joints aligned vertically a minimum of three rows apart. Minimum length of individual boards is 4ft.

### Finish:

Clear finish in two coats, one factory applied one field applied

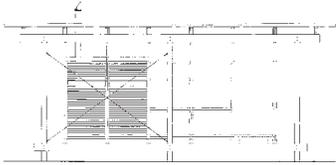


OWNER Windmill Development Group, Victoria and Ottawa  
 ARCHITECT Busby, Perkins and Will, Vancouver  
 MECHANICAL AND ELECTRICAL ENGINEERING Keen Engineering/Stantec, Calgary  
 STRUCTURAL ENGINEERS Read, Jones, Christofferson, Calgary  
 ECOLOGICAL CONSULTANTS Aqua-tex Scientific, Calgary

GREEN BUILDING CONSULTANT BuildGreen Consulting, Calgary  
 CONSTRUCTION Stuart Olso, Calgary  
 LANDSCAPE Riparia, Calgary  
 INTERIOR DESIGN Penner and Associates, Calgary  
 AIR QUALITY TESTING Theodor Sterling Associates, Calgary  
 PHOTOS Justin Lacoursiere, Calgary

# Sauna Pavilion

WEBSTER WILSON ARCHITECT



Front elevation

Inspired by his study of wood construction in Finland on a Valle Scholarship, graduate architect Webster Wilson designed and built a sauna as his master's thesis in architecture at the University of Washington. In its details and use of wood, the project demonstrates a durable and compelling model of wood construction for the timber-rich region of the northwest.



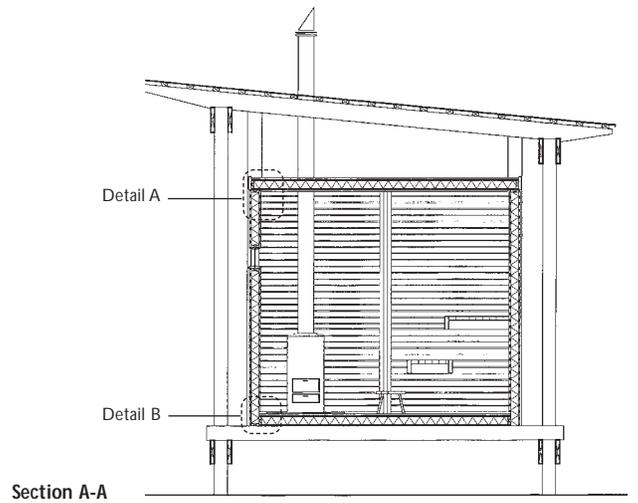


Every detail and piece of wood was carefully thought through to assure breathability and water drainage. Clear Western Red Cedar was used for siding and decking, select structural Douglas fir for framing, and stainless steel for hardware and fasteners. Lexan plastic, 10mm thick and screwed to 2x3 furring on the double fir rafters, serves as the roof. The walls, floor and roof enclosing the steaming room are designed as breathable cavities with no sheathing. Water vapor readily passes through the wood fiber insulation imported from Finland and two layers of building paper in the cavities.

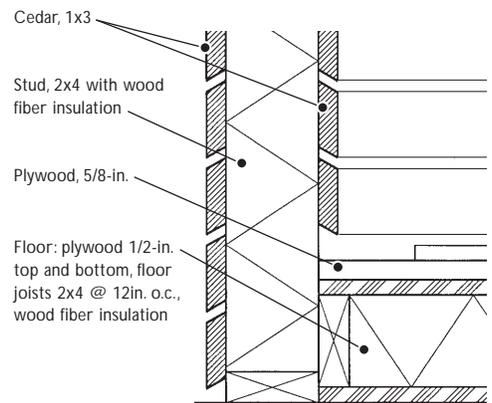
The 10ft. x 24ft. footprint of the building includes the steaming room and a covered deck and changing area. The building was designed without a specific site in mind, but was intended to sit lightly in a wooded landscape on six concrete piers. The design



THE DESIGN CONCEPT INVOLVES INSERTING A FINE CEDAR BOX AND DECK INTO AN EXPOSED WOODEN FRAME.



Section A-A

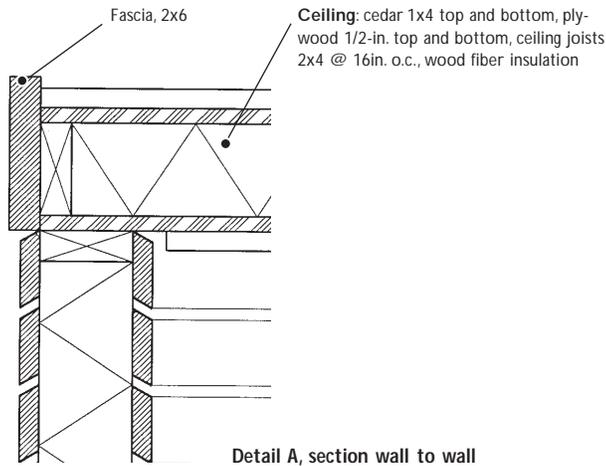


Detail B, wall to floor

CAREFUL DETAILING AND A LARGE ROOF OVERHANG ELIMINATES AREAS OF MOISTURE BUILD-UP THAT WOULD CAUSE DECAY.

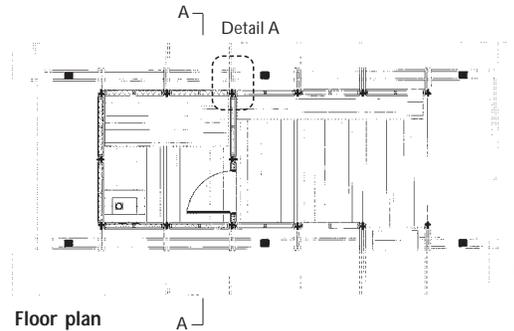
## Cedar Specs

Western Red Cedar siding, nominal 1x3 milled with angled top and bottom edges, finished with Daly's "Sea Fin" marine teak oil; ceiling: Western Red Cedar 1x4



concept involved inserting a finely crafted cedar box into an exposed wooden frame. Much of the final aesthetic evolved from the need for the building to be a kit of parts in which wall panels insert into the framing assembly by screwing through a 2x2 scab on the wall to a similar scab on the studs.

The sauna was exhibited at the university for three months before being re-erected near Langely, Whidbey Island for a private client who helped select a site among 70-year old second growth fir trees. With many years of service ahead of it, the sauna will gracefully recede into the forest from which it came.



### PRE-BUILT CEDAR WALL SECTIONS

NOTE THE 2X2 SCABS ON THE ENDS THAT FACILITATE ATTACHMENT OF THE WALL SECTIONS TO SIMILAR SCABS ON THE STUDS.

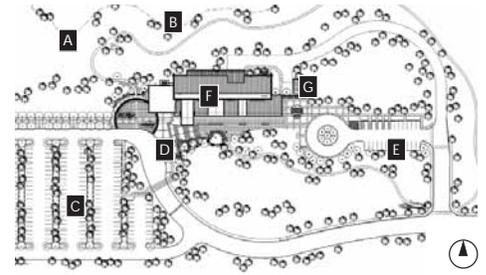


ARCHITECT Webster Wilson

GENERAL CONTRACTOR Webster Wilson

PHOTOS Mark Wilson





Plan, Site

- |   |                         |   |                  |
|---|-------------------------|---|------------------|
| A | Forest                  | E | Upper parking    |
| B | Wetland                 | F | Main building    |
| C | Lower parking           | G | Service building |
| D | Entry plaza / hillclimb |   |                  |

## Olympic College

MILLER/HULL PARTNERSHIP ARCHITECTS

The idea of a 'campus in the forest' emerged during the community-based design process, and came to symbolize the design team's ambition for the project. The desire was to plan the site development in a way that would save a buffer of second and third growth coniferous forest around the entire perimeter of the 20 acre site, shielding it from the adjacent 220 acre commercial development. .

The physical and visual fit into the forest became a defining influence on the architecture and choice of materials for the 40,000sf Phase 1 building. The other significant influence came from the strong Nordic heritage of the Poulsbo area - a heritage that in architectural terms was characterized by simple, elegant forms and details softened by the use of natural materials.



## Cedar Specs

Western Red Cedar clear 1x6 tongue and groove siding with V joint fastened with galvanized finish nails. Three coats Sikkens Cetol Translucent Finish System

WESTERN RED CEDAR SIDING WRAPS BACK INTO THE INTERIOR TO STRENGTHENS THE INDOOR-OUTDOOR RELATIONSHIP.



The building features a rich palette of durable materials such as wood, brick masonry and glass. Due to its texture and warm color, Western Red Cedar siding was chosen as it fit nicely with the character of the natural environment and complimented the steel and glass components of the building. Large glazed walls open up the building to its surroundings, and the exterior cedar siding wraps back inside the building, expressing the building form and strengthening the indoor-outdoor relationship. The dramatic architectural forms evoke images of Poulsbo's Scandinavian heritage while remaining true to its modern expression.

The self-contained campus includes classrooms, laboratory, writing and computer labs, distance-learning classrooms, an auditorium, faculty offices, and student-support areas including a study lounge, student commons, and a bookstore. The floor plan organizes the academic spaces within a simple brick-faced bar, with north light into the classrooms. South of the main corridor are the more public spaces such as the student lounge and study space.

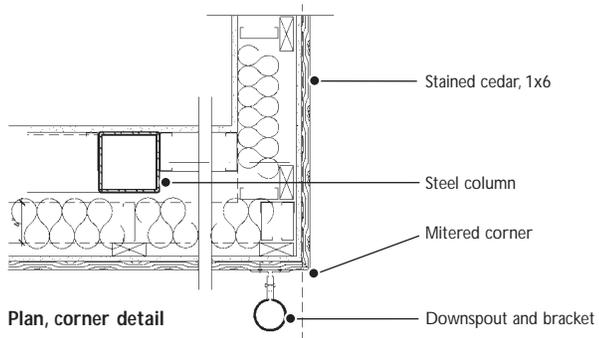
The intimate connection between the building and the wooded landscape is carefully articulated and reinforced by the careful organization and orientation of the primary entry plaza, pedestrian spine, and south facing terraces.



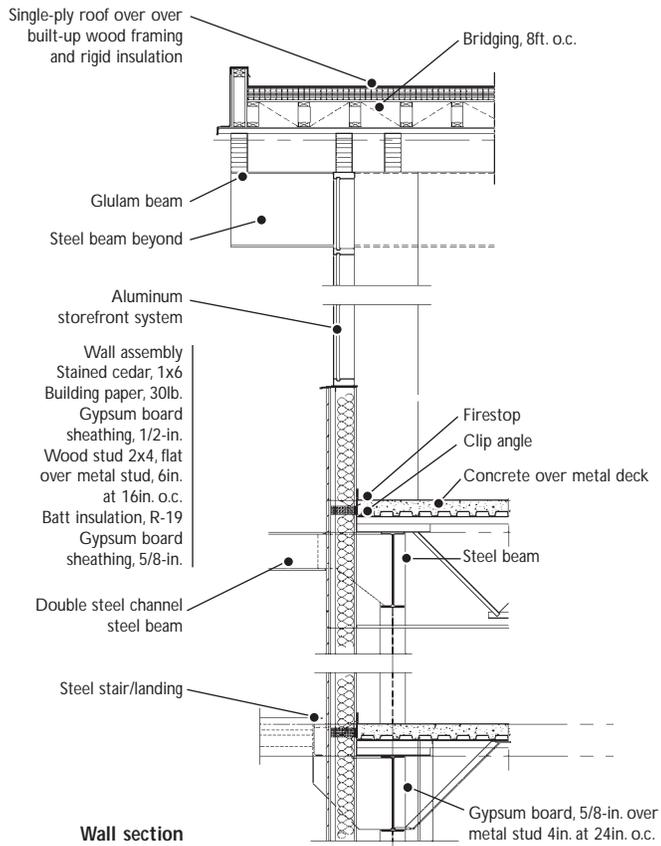


OWNER Olympic College & Washington State Dept.  
of General Administration  
ARCHITECT The Miller/Hull Partnership CCP, Seattle  
STRUCTURAL ENGINEER AKB Engineers, Seattle  
CIVIL ENGINEER AKB Engineers, Seattle  
MECHANICAL/ACOUSTICAL/AUDIO ENGINEER  
The Greenbusch Group, Seattle

ELECTRICAL/COMMUNICATIONS Sparling, Seattle  
LANDSCAPE ARCHITECT EDAW/SiteWorkshop, Seattle  
CEDAR SUPPLIERS Gray Lumber, Antrim Cedar Corporation  
(supplied Gary Lumber with materials)  
GENERAL CONTRACTOR Howard S. Wright Construction Co., Seattle  
PHOTOGRAPHER Nic Lehoux, Vancouver

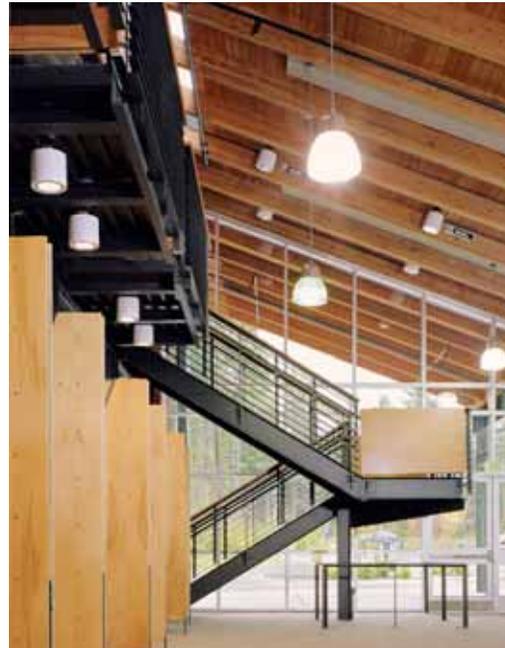


Plan, corner detail



Wall section

CEDAR FITS WITH THE  
NATURAL ENVIRONMENT  
WHILE COMPLEMENTING  
THE MODERN ARCHITEC-  
TURAL EXPRESSION OF  
EXPOSED STEEL AND  
GLASS.





ÆTHE STRONG ARCHITECTURAL FORM OF THE CEDAR PAVILION MAKES IT THE FOCAL POINT OF THE BACKYARD GARDEN.



## Garden Pavilion

PAUL RAFF STUDIO INC.

**Sitting in the backyard of a residential lot, the pavilion serves the range of activities from a private place to public meetings and performances of the local Artists' Garden Cooperative, a group that connects its activities to the urban garden atmosphere. The client wanted the pavilion to have a strong architectural theme as a focal point for the garden and as a backdrop for performances, but at the same time to connect sky to earth in a delicate interplay of light and shadow.**

The form responds to the narrow garden site and to the strategy of shading the rays of the mid-afternoon sun while also maximizing views to the sky, thus the structure angles toward the highest point of the sun. There is an intentional kinship with traditional Japanese forms, such as the gently bowing roof, that evoke grace and calm.

The pavilion is a low maintenance structure built of economical and naturally durable knotty grade 2x4 Western Red Cedar used in a type of rhythmic lattice construction that elevates the 2x4 to an aesthetic abstraction. It touches the land lightly, with a compact, partly cantilevered footprint resting on four foundation columns.

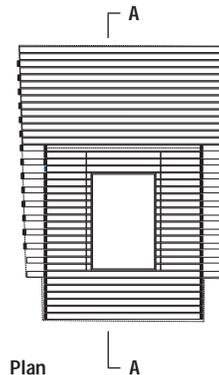




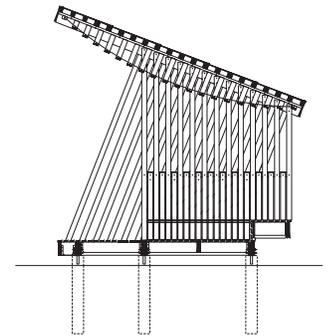
CLIENT Susan Brown, Toronto  
ARCHITECT Paul Raff Studio Inc., Toronto  
DESIGN ENGINEER Sasquatch, Toronto  
GENERAL CONTRACTOR Sasquatch, Toronto  
PHOTOS Paul Raff, Toronto



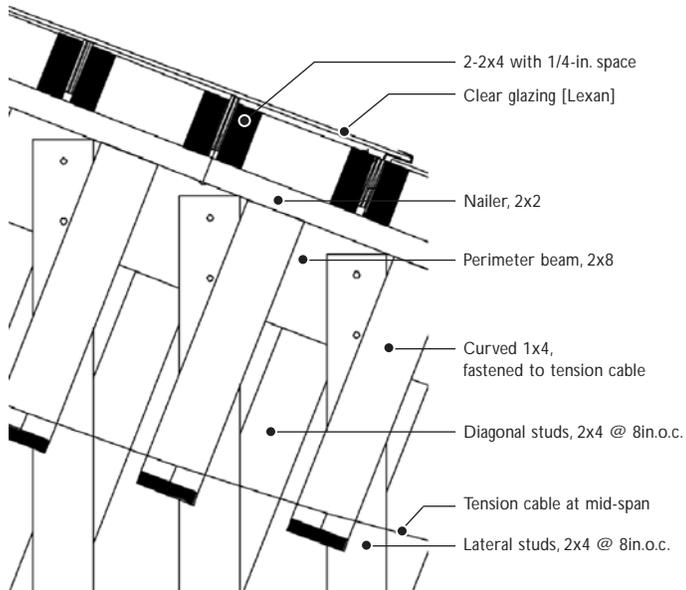
Cedar framing pieces are set 4in. o.c. The double framing layers of the wall and glazed roof create an ambiguous sense of depth. In the walls, one structural layer tilts outward to make comfortable back support for built-in seating, and the outer layer of framing tilts south in the same direction as the uplifted roof. The two framing layers bring rigidity and eliminate the need for cross-bracing. The upper layer of the trellis roof acts in tension and the curved 1x4 lower members, held in alignment by a steel tension cable that crosses at mid-span, are in compression. The framing method creates a taut structure, both physically and visually. Computer generated measurements were used to guide the precise cutting of lengths and angles required.



Plan



Section A-A



Detail of cedar framing at wall/ roof intersection



COMMON, KNOTTY 2X4 CEDAR LUMBER, USED IN A RHYTHMIC, LATTICE MANNER, ELEVATES THE 2X4 TO AN AESTHETIC ABSTRACTION.



## Cedar Specs

Knotty cedar 2x4 and 1x4;  
 Lexan roof with custom stainless steel clips



# Abbe Science Center, Solebury School

HILLIER ARCHITECTURE



REAL CEDAR AWARD WINNER,  
WOOD DESIGN AWARDS 2004

**The 75-year old private preparatory school occupies 99 acres in Solebury Township of Bucks County, Pennsylvania, serving 200 boarding and day students in grades 7 to 12. Built around the original farmhouse and established trees, its buildings have the scale and character of a rural village, and a strong connection with the surrounding nature.**

The new 13,500sf Abbe Science Center maintains these qualities with a single-story L-shaped plan that forms a three-sided courtyard with the library. It exploits the north-south, east-west axes to maximize daylighting and passive solar gain. Lined with oversized glass doors, the single-loaded corridors give direct and literal connections to the outside.

The steel frame Science Center houses four science classrooms, four general classrooms, a greenhouse, teacher work areas and support facilities. Infrastructure includes wired and wireless networks, and individually zoned HVAC systems. A two-story student lounge, located at the confluence of the two wings, serves as the hub for informal meetings between students and instructors.

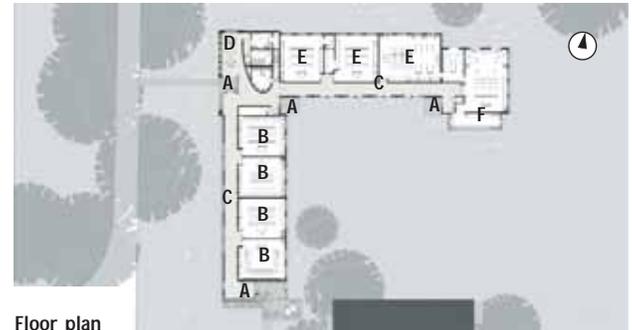
THE FORM AND CEDAR DETAILING OF THE PROJECT MAKE A MODERN INTERPRETATION OF THE SCHOOLHOUSE AND BARN.



CUSTOM-MILLED CEDAR SIDING PATTERNS VISUALLY DISTINGUISH THE TWO-STORY LOUNGE AND ONE-STORY CLASSROOMS.



- |   |                   |   |                |   |                   |
|---|-------------------|---|----------------|---|-------------------|
| A | Entry             | C | Corridor       | E | Science classroom |
| B | General classroom | D | Student lounge | F | Greenhouse        |

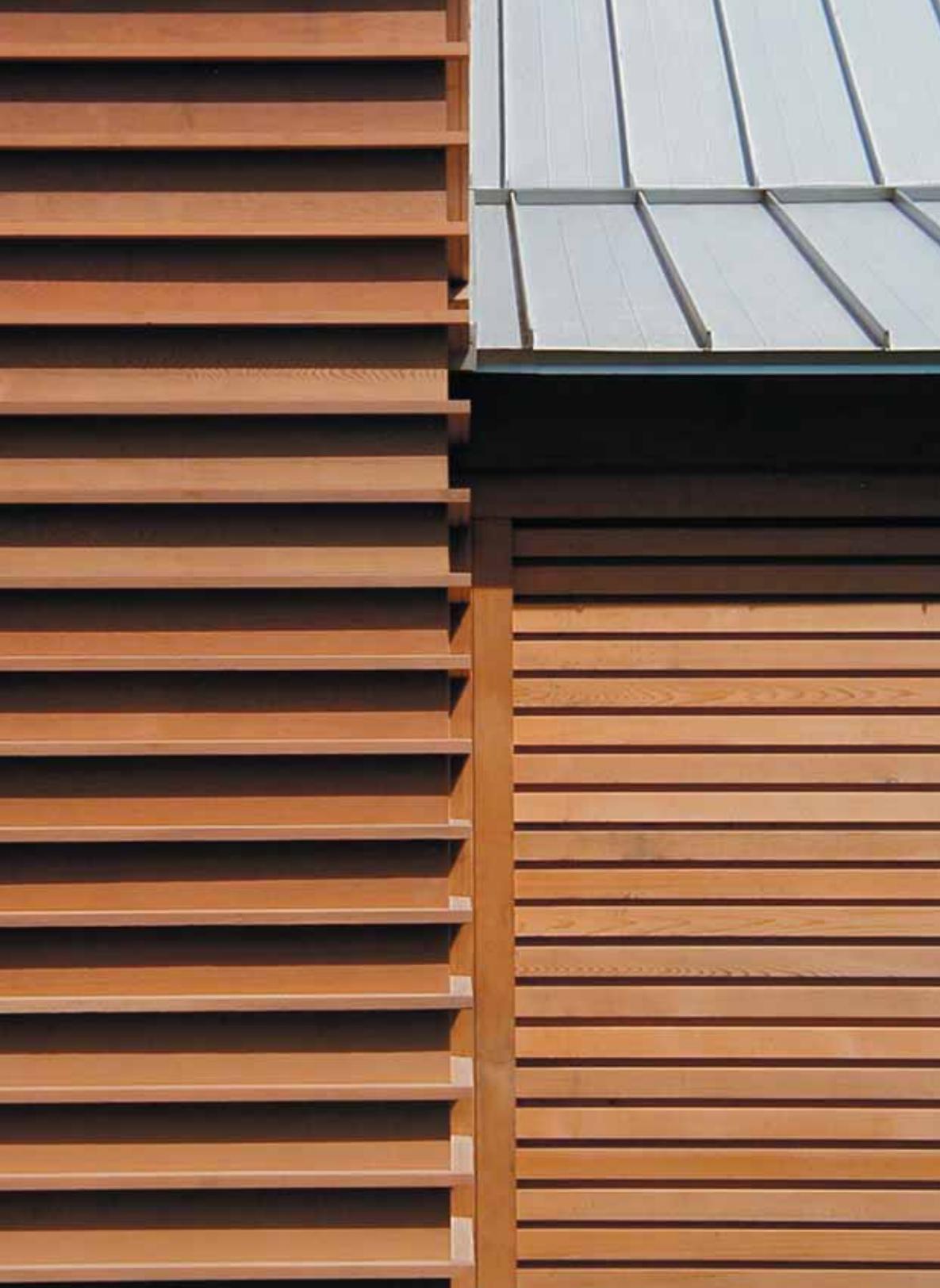


Floor plan



The architecture makes a modern interpretation of the rural schoolhouse and barn. The exterior Western Red Cedar siding of the one-story classrooms has a stylized corn crib appearance with panelized 1x4 cedar at the entrances, and with nominal 2x4 cedar custom milled in a drop siding pattern that results in a horizontal 1in. channel between siding courses. The protruding upper edges slope 1/8-in. to shed moisture. The siding profile shifts in scale and texture at the two-story lounge with use of horizontal battens at the joints of 1in. thick cedar siding milled with a lower rabbeted edge. The horizontal battens have a 1/8-in. slope and a drip groove. Both siding types are fixed to vertical 1x2 furring with a 3/4-in. air space behind. A pattern of small, rectangular boxed-in windows have visual appeal while offering vignettes of the outdoor landscape.

Millwork consists of maple veneer on medium density fiberboard [MDF] for cabinets, shelving and cubbies, a mahogany slatted bench at the west entrance, and a built-in maple veneer bench in the student lounge.



## Cedar Specs

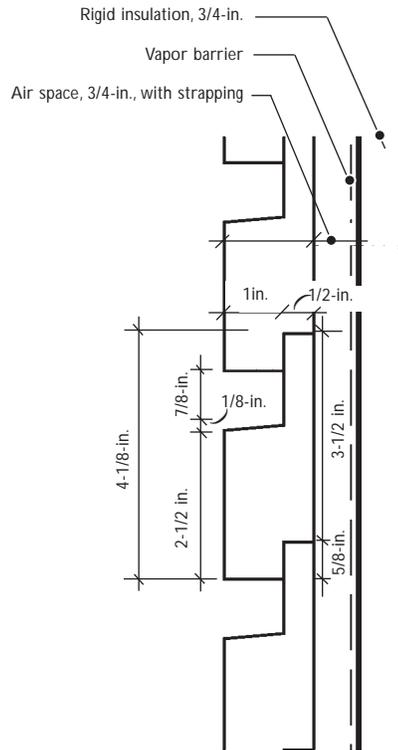
### Exterior

Western Red Cedar siding  
1x4 and 2x4, custom milled  
profiles by K+L Millwork,  
stained marine grade plywood  
at west entrance, Olympic  
exterior wood stain

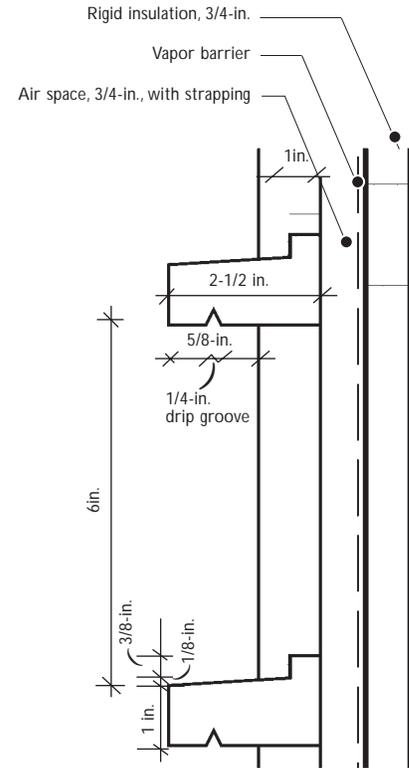
### Interior

Western Red Cedar, tongue  
and groove 1x6 in ceiling  
lounge

PANELIZED 1X4 CEDAR SIDING GIVES ENTRANCES A STYLIZED CORN CRIB APPEARANCE.

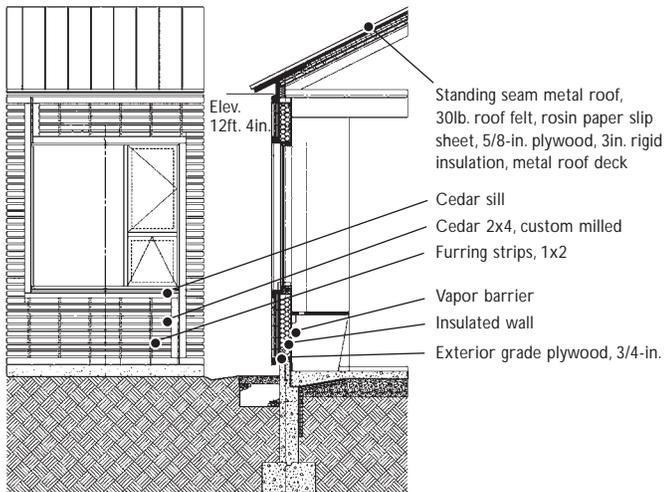


Detail, cedar siding one-story construction

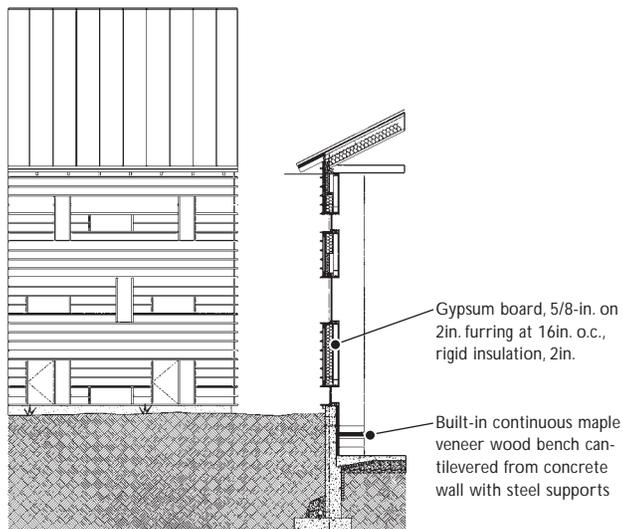


Detail, cedar siding two-story construction

CLIENT Solebury School, New Hope, PA  
 ARCHITECT Hillier Architecture (now RMJM Hillier Architects), Princeton, New Jersey  
 STRUCTURAL ENGINEER Greenman-Pedersen, Inc. Scranton, PA  
 SITE/CIVIL ENGINEER Van Cleef Engineering Associates, Doylestown, PA  
 CONSTRUCTION MANAGER E. Allen Reeves, Inc., Abington, PA  
 SITE WORK Drum Construction Company, Inc., Telford, PA  
 PHOTOS Albert Vecerka, Esto Photographics Inc., Mamaroneck, New York



Wall section and partial elevation, one-story construction



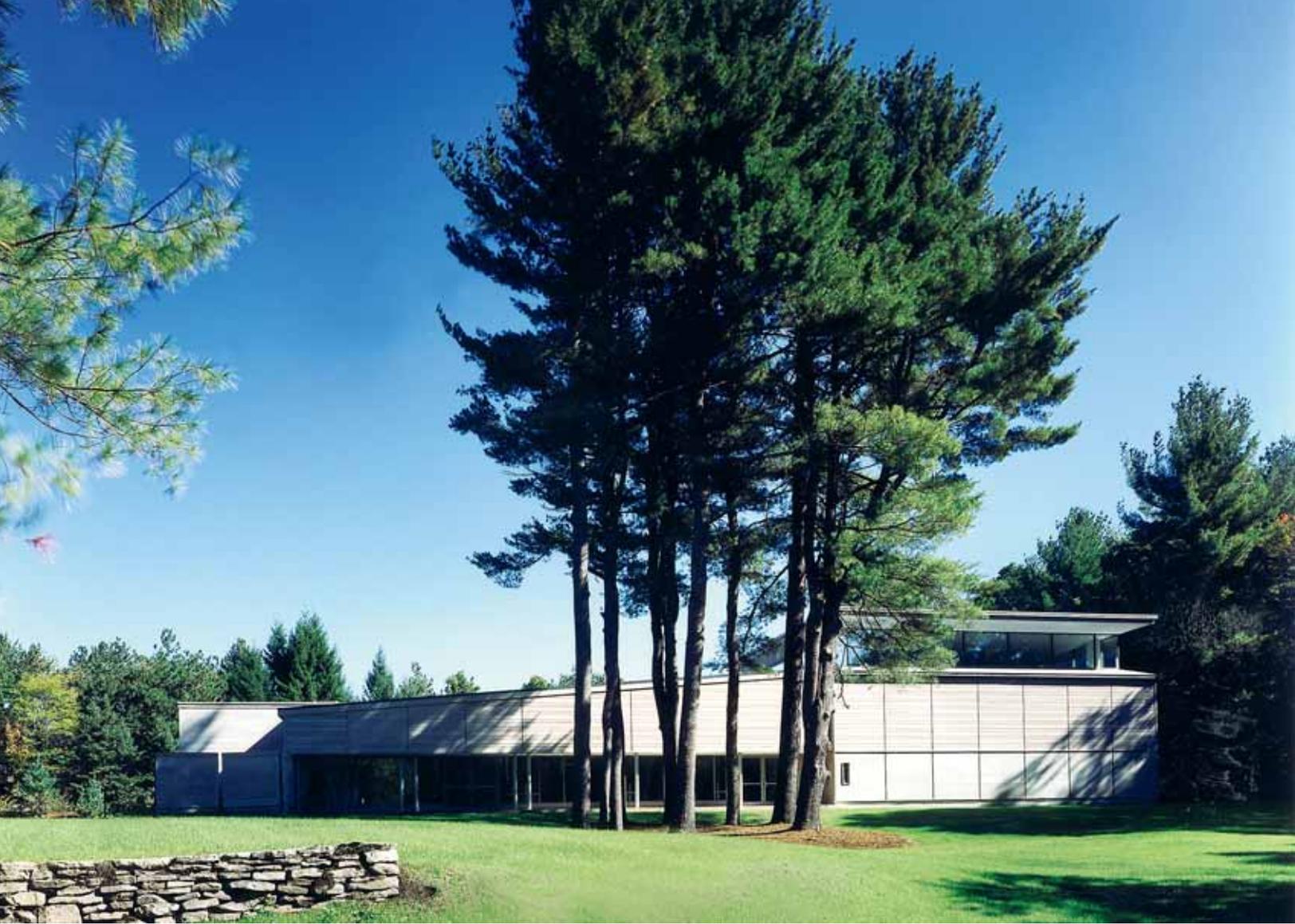
Wall section and partial elevation, two-story construction

CUSTOM MILLING OF THE CEDAR SIDINGS DELIVERS DISTINCTIVE PROFILES, WITH SLOPED SURFACES AND DRIP GROOVES TO SHED MOISTURE.



COLOR, A CEDAR CEILING AND NATURAL LIGHT MAKE A STIMULATING LOUNGE.





## Or Atid Synagogue

BRUNER COTT AND ASSOCIATES ARCHITECTS

After worshipping in borrowed church space for 10 years, this Conservative congregation asked for a 16,000sf synagogue including a sanctuary that could expand during High Holidays, a large function room with a kosher kitchen, eight classrooms for a Hebrew school, a library and offices.

The congregation's philosophy statement expressed belief in "a contemporary approach to Judaism... with respect for tradition" and asked that the architecture embrace the site's regional qualities.

The architects selected Western Red Cedar as the primary exterior material for two reasons. First, for the community, wood cladding is consistent with the predominant material found on homes in this area. Second, the overriding design concept is an attempt to create a contemporary interpretation of the 18th century timber synagogues throughout eastern Europe and Russia, which employ pure and symbolic geometric forms, extensive top lighting and tectonic expression.

The building was designed to fit comfortably within a residential, suburban setting and highlight the most attractive site features, in particular the gently rising grade and several majestic stands of white pine. Building siting and program organization was determined by attempts to preserve trees, orient sacred spaces in relation to the Holy Land, and provide a clear and



WESTERN RED CEDAR FITS WITH THE ARCHITECTURAL STYLE OF THE SURROUNDING COMMUNITY, RECALLS 18TH CENTURY TIMBER SYNAGOGUES OF EASTERN EUROPE, AND MAKES A DURABLE CLADDING.

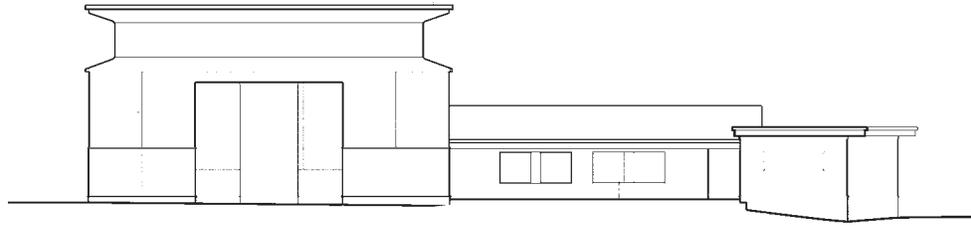




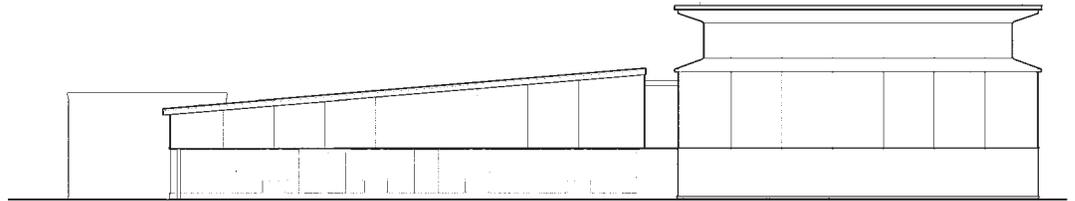
meaningful sequence of interior spaces. Reflecting the meaning of its name, "Light of the Future", the building is characterized by overhead natural light which penetrates the building in a variety of punched window, butt-glazed clerestories, and skylights with deeply flared light wells.

Five different types of Western Red Cedar siding comprise a modified rain screen system that offers flexibility to express different building volumes or functions. Prestained shiplap, clapboard, and tongue/groove patterns with expressed aluminum trims and exposed fasteners over a sheathing breather and rigid insulation over plywood create a unique wall assembly suitable to new energy codes.

Contemporary custom milled cedar window 'casings' and other trim shapes contribute towards a reinterpretation of traditional New England construction that complements rather than mimics its residential neighbours.



South elevation



West elevation



## Cedar Specs

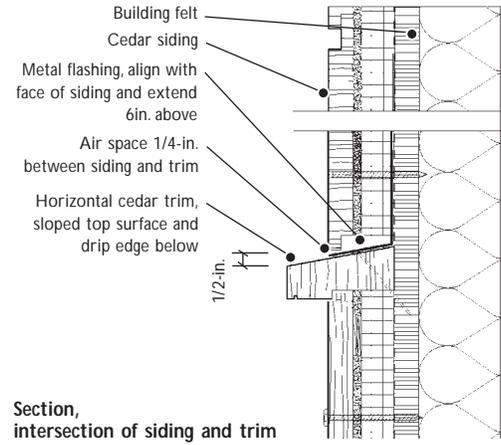
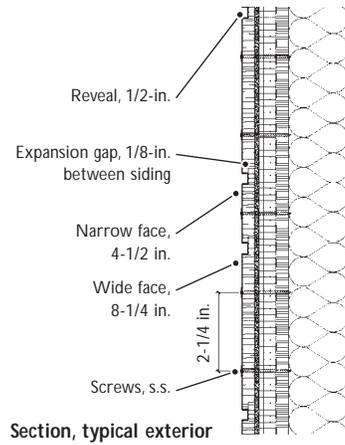
Five types of siding profiles, including shiplit and tongue and groove patterns, pre-stained.

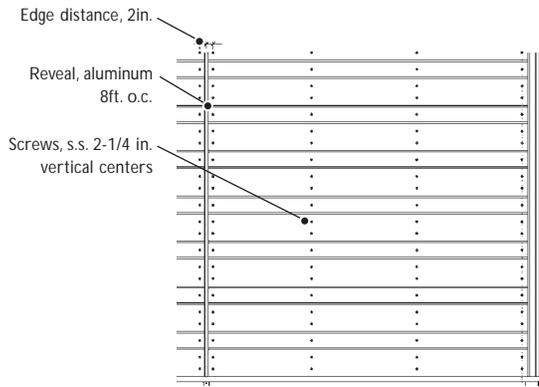
VARIOUS CEDAR SIDING PROFILES HELP TO EXPRESS DIFFERENT BUILDING VOLUMES OF THE SYNAGOGUE.



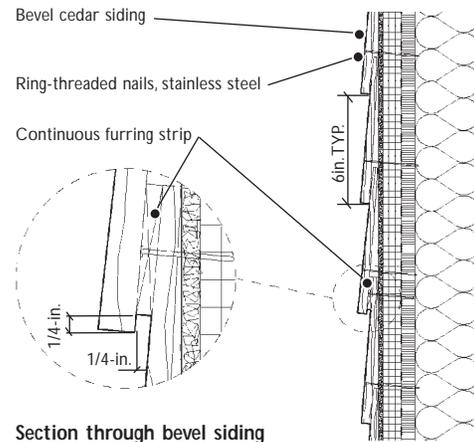


CONSIDERED DETAILING  
REINTERPRETS TRADITION-  
AL NEW ENGLAND  
CONSTRUCTION.

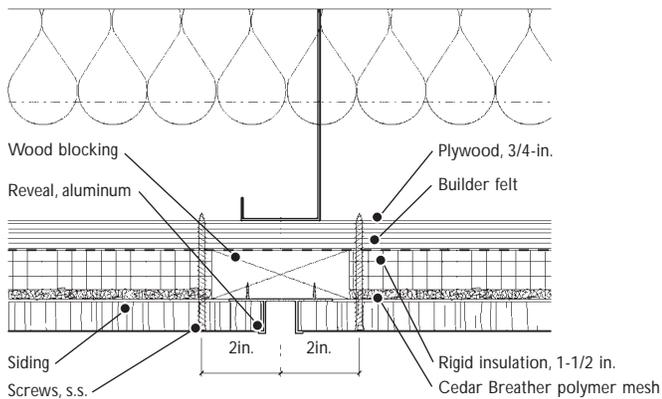




**Elevation** [Only half of 8ft. module shown]



**Section through bevel siding**



**Plan** Siding type: Horizontal channel rustic cedar, alternating widths



CLIENT Congregation Or Atid, Wayland, MA  
 ARCHITECT Bruner/Cott & Associates, Inc., Cambridge, MA  
 CONTRACTOR Elaine Construction Company, Inc., Newton Highlands, MA  
 STRUCTURAL ENGINEER Souza, True & Partners, Inc., Watertown, MA  
 MECHANICAL ENGINEER Building Engineer Resources, Inc., North Easton, MA  
 CIVIL ENGINEERS Samiotes Consultants, Inc., Framingham, MA

SPEC WRITER Kalin Associates, Inc., Newton Centre, MA  
 LANDSCAPE ARCHITECTS Richard Burck Associates, Inc., Somerville, MA  
 GEOTECHNICAL CONSULTANT McPhail Associates, Cambridge, MA  
 LIGHTING CONSULTANT Agassiz Theatre, Boston  
 JUDAICA SPECIALIST David Strauss Designs, New York  
 PHOTOGRAPHER Peter Vanderwarker, West Newton, MA



## Bathhouse, Great Western

CRAIG CHATMAN ARCHITECT

Natural materials and precision manufacturing combined to create a prefabricated dwelling located north west of Melbourne in the Grampians region of Victoria. This weekend 'shack' sits on 20 acres amongst the undulating planes of century old compacted sheep grazing land.

The building has been designed with three distinct zones, the primary living, the secondary living (the outdoor deck) and the bathing area (the sauna). The deliberate informality of the composition is in keeping with the owner's casual weekend use of the property, and facilitates a natural and unstructured revegetation of the land.

Easily moveable furniture and a folding bed in the main living area maximize the use of the small spaces. The building is energy self sufficient, using solar panels and second growth eucalyptus as fuel for the wood stove, that also heats water for the sauna. The combined sauna and bathing area is lined with cedar and has floor to ceiling windows that enhance the connection of building to site.

The building is constructed from a structural system developed by arkit.com which relies on integrated panels combining exterior cladding, insulation and interior lining. Each panel is manufactured using Western Red Cedar - a sustainable managed natural resource with exceptional beauty, built-in resistance to

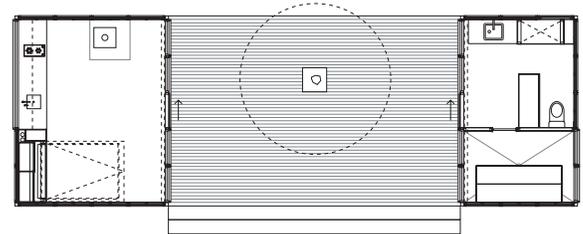




harsh environmental conditions, and inherent insulating properties. Panels and windows interlock to form a rigid wall system.

This building is the first of a prefabricated simple housing system. The system relies on the modulated standards of industry where off-the-shelf dimensions of materials such as the plywood wall lining dictates the size of the cedar wall panels that in turn dictates the ceiling lining, providing the overriding grid of the house. Together with unwanted shiplap siding shorts, it provides an extremely cost effective all in one wall panel: external cladding, structure, insulation and internal lining complete, taking a fraction of the normal time to manufacture, deliver and erect.

In this application, the simple cedar clad forms are at once connected to and distinct from their rural context.



Floor plan



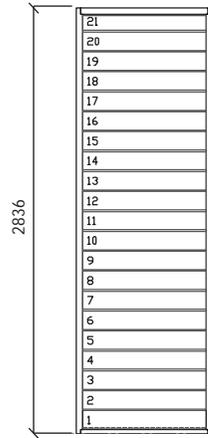
Side elevations



Longitudinal elevation

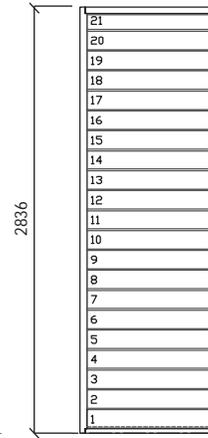


THE PREFAB WEEKEND RETREAT USES CONSTRUCTED PANELS OF EXTERIOR CEDAR CLADDING, INSULATION, AND INTERIOR CEDAR PANELING AND PLYWOOD. BASING THE BUILDING DIMENSIONS ON SIZES OF THE OFF-THE-SHELF COMPONENTS LOWERS CONSTRUCTION COSTS.



**E\_PANEL\_2860**

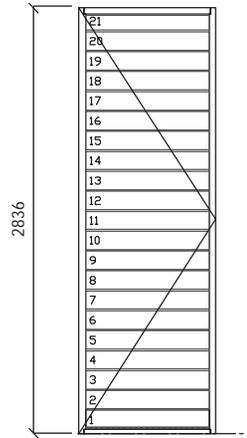
North elevation x3  
 East elevation x4  
 West elevation x6  
 South elevation x2



**E\_PANEL\_2860\_WET**

East elevation x3

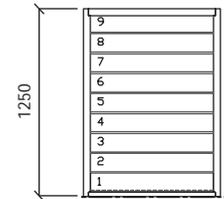
- No plywood internal cladding
- Additional notes: provide 50mm R3 insulation batts together with aircell



**SPECIAL**

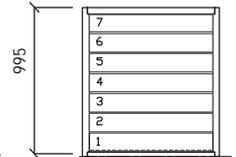
West elevation x1

**Panel schedule**



**E\_PANEL\_1250**

South elevation x3



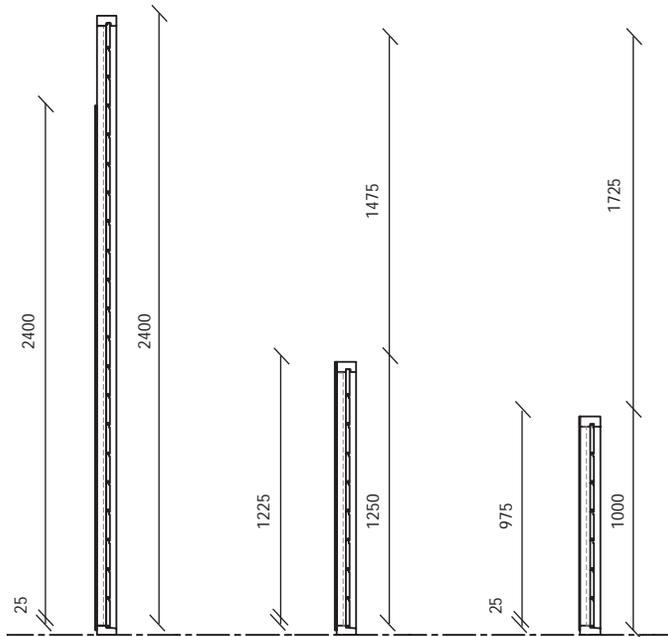
**E\_PANEL\_1000**

South elevation x3

## Cedar Specs

### Wall Panels

910mm wide panels incorporating 90x45mm perimeter frame with 17mm external shiplap cladding attached using concealed fixings. Panels interlock using a water tight tongue and groove detail, as well as being screwed and glued using flexible mastic. Connection creates 90 x 90 columns that carry roof loads. Western Red Cedar is 'all clears' or premium grade, finished with a mix of tung oil and lanolin.



Cedar panel sections



CLIENT Isabel Valenzuela  
 ARCHITECT cc-ark Craig Chatman Architect, Collingwood, Victoria  
 STRUCTURAL ENGINEERS Antonov and Snashall P/L, North Balwyn, Victoria  
 CONTRACTOR arkit P/L  
 SUPPLIER OF WESTERN RED CEDAR Bayswood Timber, Hallam Victoria  
 PHOTOGRAPHY Craig Chatman  
 SPECIAL CREDIT [www.archit.com.au](http://www.archit.com.au)





## Operations Centre, Gulf Islands National Park Reserve

LARRY MCFARLAND ARCHITECTS LTD.

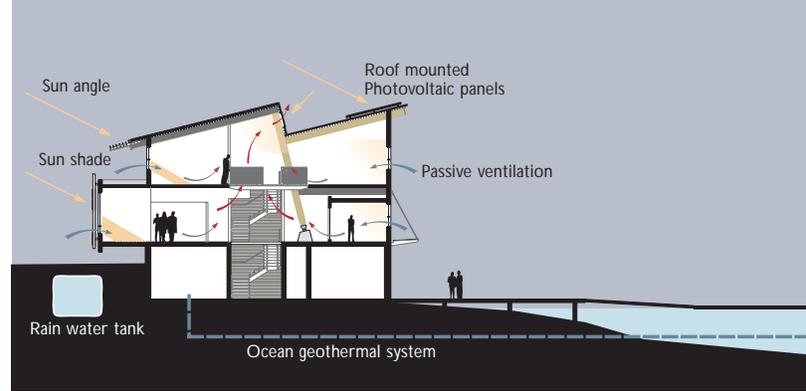
### A LEED PLATINUM PROJECT

**The new Gulf Islands National Park Reserve protects the ecological integrity of more than 60 square kilometers of land and water characteristic of the Strait of Georgia Lowlands natural region. This project afforded Parks Canada the opportunity to create a facility consistent with its core values of resource conservation.**

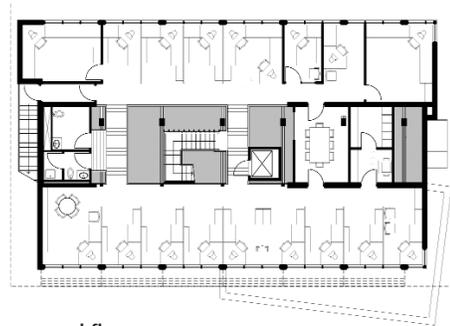
The design embodies several sustainable strategies that take advantage of the natural attributes of the site and region. These include rainwater capture and reuse that significantly reduces the use of potable water; photovoltaic panels installed on the roof to convert sunlight to electricity and supply 20% of the building's energy; a saltwater geo-exchange system that supplies 100% of the building's heating needs draws heat from the ocean; and an open plan layout that facilitates both natural ventilation and effective day lighting.

Durability of materials was a key consideration in the harsh marine environment. Locally harvested wood was chosen as an interior finish to complement the concrete floors and exposed steel deck of the main spaces, and as an exterior finish to contrast with the corrugated metal cladding.

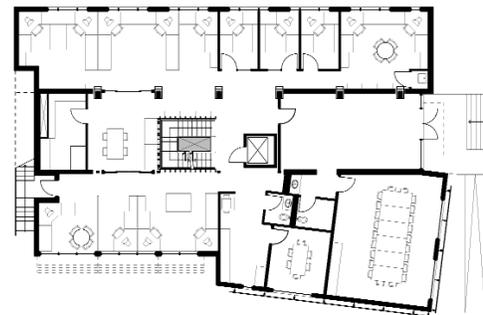
SUNSCREENS INCORPORATE VARIOUS STANDARD CEDAR BOARD SIZES, AND 1X4 CEDAR SIDING IS APPLIED TO VERTICAL STRAPPING.



Section, showing passive solar and ventilation patterns



Plan, second floor



Plan, main floor

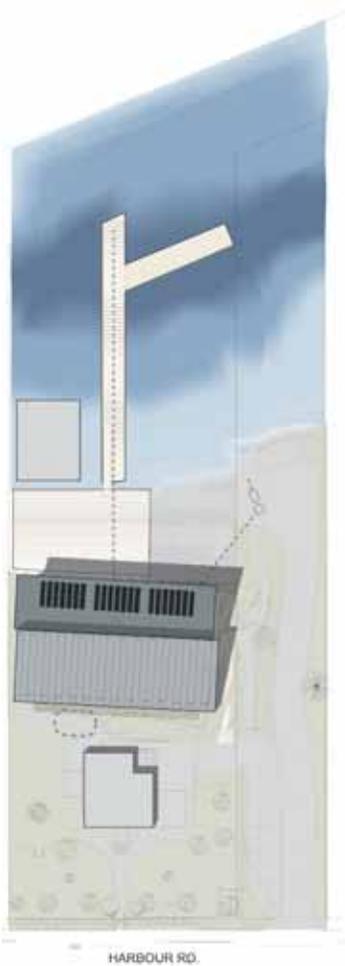
Several interior walls are clad in Western Red Cedar slats, gapped and backed with acoustic insulation to provide sound absorption.

Cedar is also used in the open partition which surrounds the main staircase that rises through the atrium. This feature was designed to provide a sense of enclosure without compromising the openness of the atrium, and permitting filtered views and natural light to penetrate the space.

Western Red Cedar was chosen for external use because of its natural resistance to degradation. The sunscreens incorporate a range of standard board sizes while the exterior horizontal cladding is made from custom milled 1x4 sections.

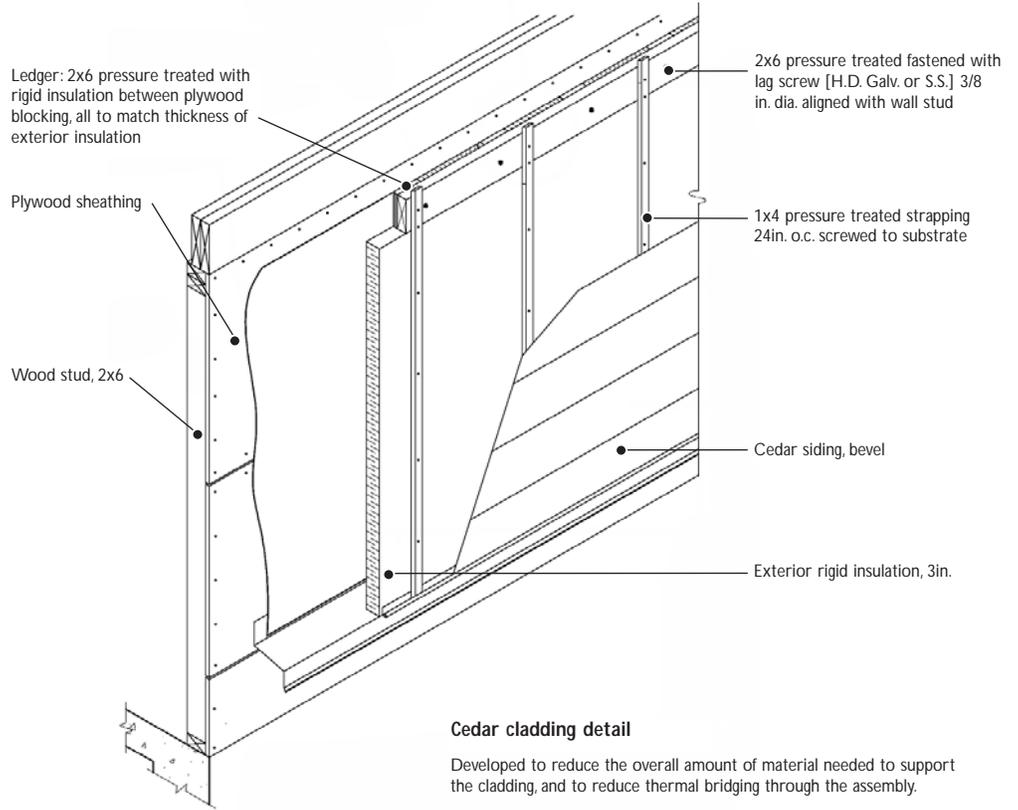
This building demonstrates how it is possible to drastically reduce consumption of energy and water, provide an exceptional indoor environment, build using a significant amount of local and recycled materials, yet at the same time interact intimately with the site.



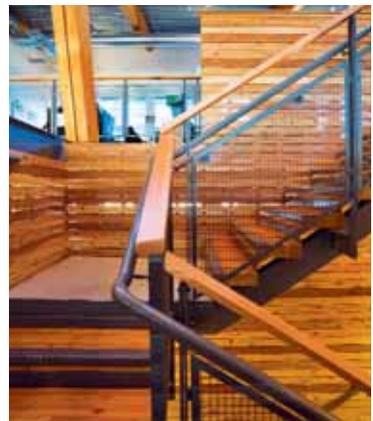


HARBOUR RD.

Site plan



CEDAR SURROUNDS THE MAIN STAIRCASE THAT RISES THROUGH THE ATRIUM.





## Cedar Specs

Exterior Sun Shades  
2x10 STK horizontal  
Western Red Cedar  
members, 2x4 STK  
Western Red Cedar  
vertical members

Exterior Cladding  
1x4 Clear Western Red  
Cedar board's custom  
milled

Interior Stair Enclosure  
1x3-1/2 cedar prefinished  
Grade B slats at 7in. oc

Interior Acoustic partitions  
1x2 prefinished Grade B  
Western Red Cedar strap-  
ping @ 24in. oc and 1x4  
prefinished Grade B  
Western Red Cedar siding  
at 4in. oc

Stainless steel screws used  
throughout

Finishes

For exterior applications,  
two coats of Sansin SDF

For interior applications,  
two coats of Sansin Purity  
Interior Clear

OWNER Parks Canada  
PROJECT MANAGER Public Works and Government Services Canada  
ARCHITECT Larry McFarland Architects Ltd., Vancouver  
LEED COORDINATOR Larry McFarland Architects Ltd, Vancouver  
STRUCTURAL ENGINEER CWMM Consulting Engineers, Vancouver  
MECHANICAL ENGINEER Stantec Consulting Inc., North Vancouver  
ELECTRICAL ENGINEER Robert Freundlich & Associates Ltd., Vancouver  
ENERGY ENGINEER EnerSys Analytics Inc., Coquitlam, BC  
LANDSCAPE ARCHITECT Phillips Farevaag Smallemberg, Vancouver

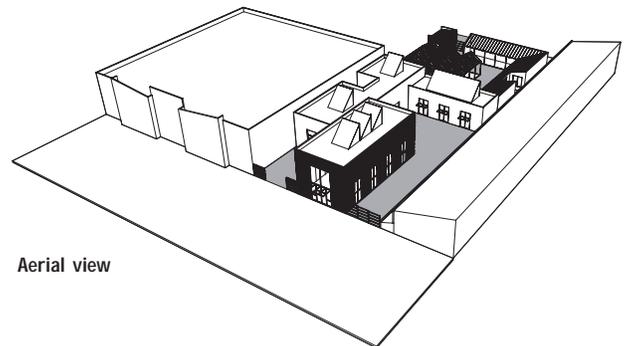
CIVIL ENGINEER 1st Team Engineering Ltd., Vancouver  
COST CONSULTANT James Bush & Associates Ltd., Surrey, BC  
COMMISSIONING AGENT BC Buildings Corporation, Victoria  
ENVIRONMENTAL ADVISER Public Works & Government Services Canada,  
Contaminated Sites Environmental Services  
BUILDING SCIENCE PROFESSIONAL Read Jones Christoffersen Ltd, Vancouver  
GENERAL CONTRACTOR Ledcor Special Projects, Vancouver  
CEDAR SUPPLIER Slegg Lumber Ltd., Sidney, BC  
PHOTOGRAPHER Derek Lepper, Vancouver



## Poppybox Gardens

JENSEN ARCHITECTS

Poppybox Gardens is a newly established retailer specializing in products for home gardening and outdoor living. The design of their first retail store was seen as a way to crystallize the fundamentals of the Poppybox brand and to translate them into built form.



Aerial view

Fundamental to the corporate philosophy was a desire to make the shopping experience for gardeners as varied and pleasurable as gardening itself. The design of the flagship store, located in a sprawling retail mall on the outskirts of Portland, Oregon, is in refreshing contrast to the "billboard and big box" approach of its neighbors.

Occupying the entire site, Poppybox Gardens is an interconnecting series of indoor and outdoor spaces each with its own scale and character. These spaces are intended to evoke memories of courtyards, terraces, conservatories, secret gardens and other garden archetypes. Screens and pergolas blur the distinction between indoor and outdoor spaces, ease the transition between the brightness of daylight and the darker interior spaces, and promote fluidity of movement throughout the 18,000sf facility.

CLIENT Poppybox Gardens, Tigard, OR  
ARCHITECT Jensen & Macy Architects, San Francisco  
ENGINEER VLMK Consulting Engineers, Portland, OR  
CONSTRUCTION R&H Construction, Portland, OR  
PHOTOS Mark Jensen, San Francisco



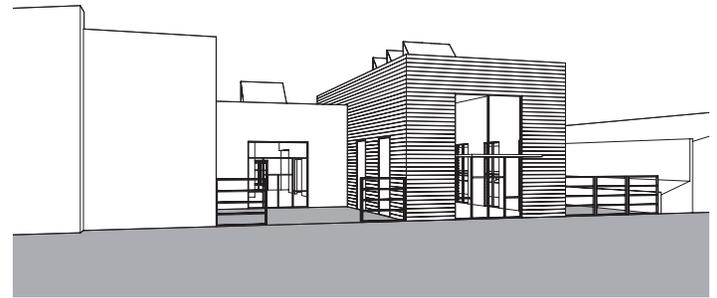
WESTERN RED CEDAR SIDING DELIVERS LONG PERFORMANCE AND A REFINED CONTEMPORARY ARCHITECTURAL APPEARANCE. IT WAS ALSO CHOSEN TO REINFORCE THE NATURAL GROWTH THEME OF THE GARDENING STORE.



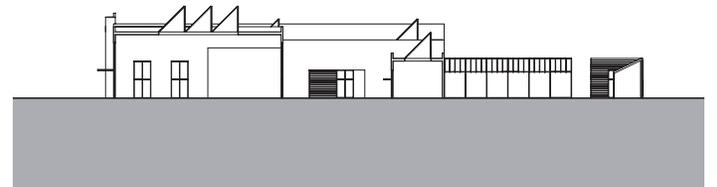


## Cedar Specs

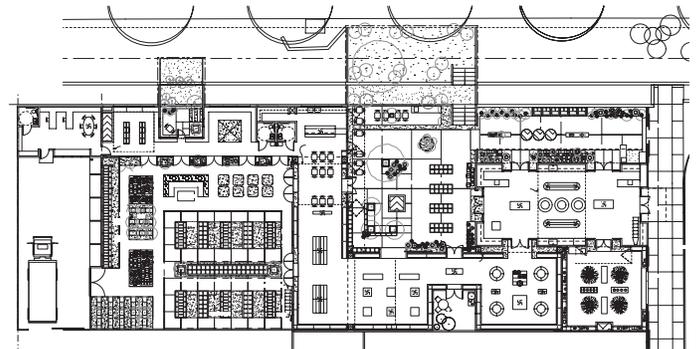
Western Red Cedar 1x6 applied on vertical strapping in a rain-screen construction.



Entry



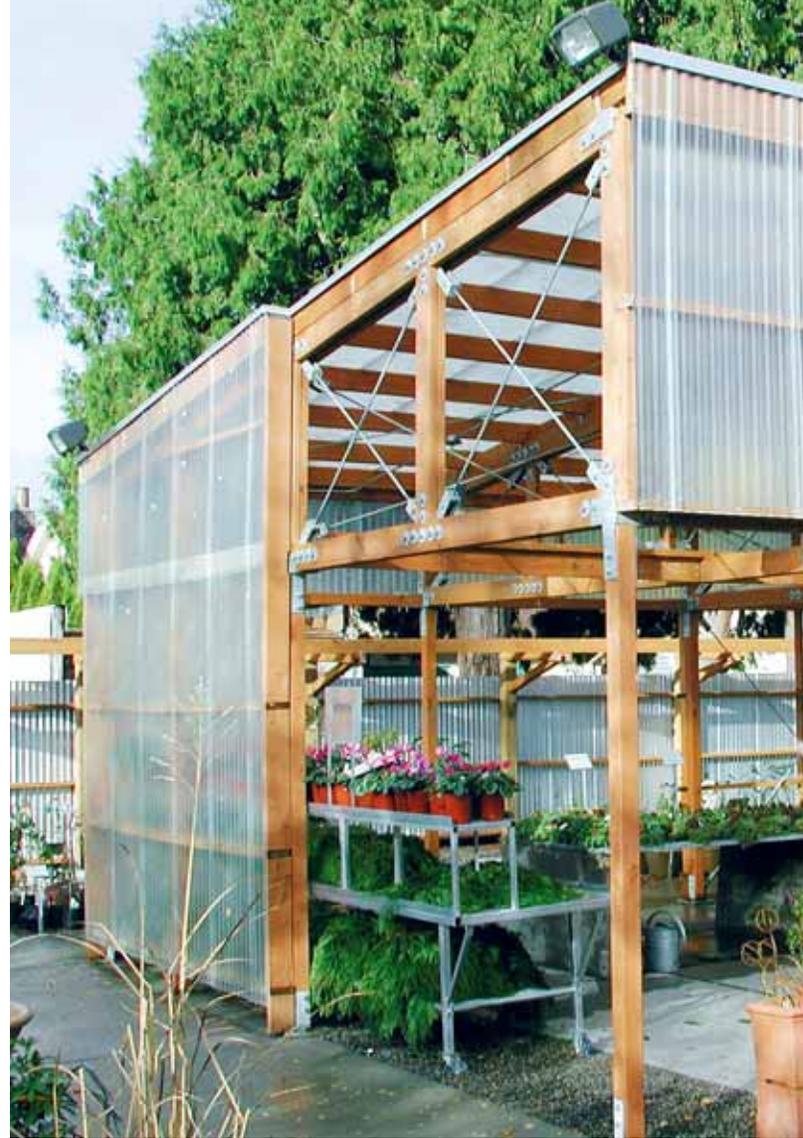
Section



Floor plan

The Poppybox design concept endeavors to humanize the shopping experience by exposing the construction materials, expressing the heavy timber structure and above all by using wood throughout. Forms are simple and traditional, but the detailing has a refinement that heightens the visitor's appreciation of the building. Likewise, the choice of clear finished solid wood for the custom display fixtures sets Poppybox apart from other retailers and helps to create an intimate and inviting environment for the serious gardener.

Western Red Cedar is the primary exterior finish. It was chosen to provide warmth, to tie the interior and exterior spaces together, and to reinforce the idea of natural growth - which is the core of the Poppybox retail philosophy. This store provides a compelling planning template and architectural vocabulary for future expansion of the Poppybox chain across the western states.



INTERCONNECTED INDOOR AND OUTDOOR SPACES, EACH WITH THEIR OWN SCALE AND CHARACTER, ARE ARRANGED TO GIVE A PLEASURABLE SHOPPING EXPERIENCE.