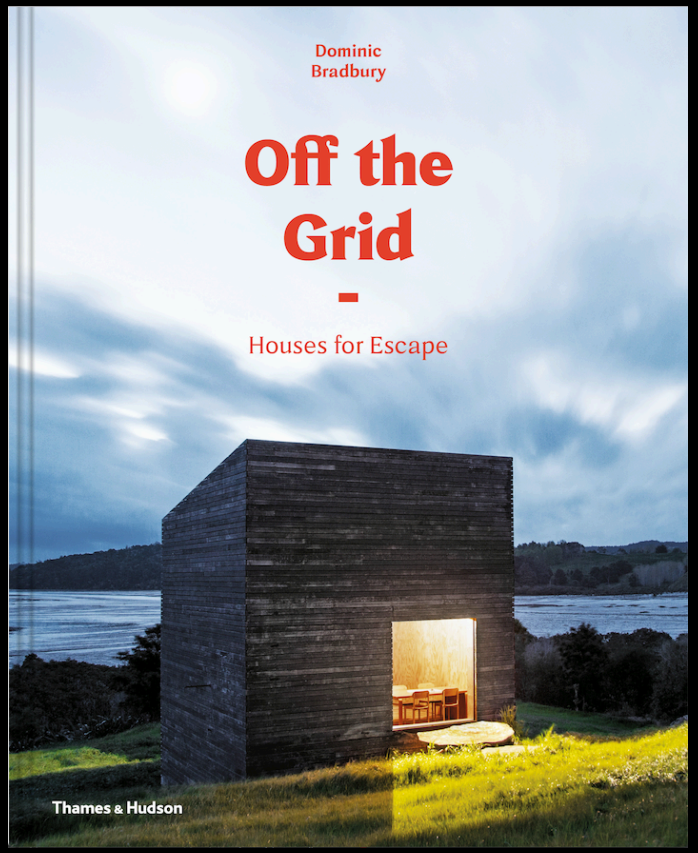
The ultimate escapist collection of self-sufficient cabins and retreats in the world's most stunning and inaccessible locations

Off the Grid

Houses for Escape

Dominic Bradbury



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Book

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Key Sales Points

- Showcases over 40 homes, whose innovative architecture and technology have enabled their inhabitants to live an autonomous existence in some of the most extraordinary natural environments on the planet
- Tapping into people's increasing interest in a 'screenless experience', the book illustrates how sustainable living can combine back-to-nature basics with home comforts
- Includes an explanatory section at the end to give direction anyone wishing to build their own remarkable structure
- Features the work of leading international architects including Todd Saunders and Snorre Stinessen

Contents

Shelter in the High Mountains

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Jarmund Vigsnæs: Rabot Cabin, Okstindan, Nordland, Norway

The cabin offers a high altitude mountain refuge in the Okstindan range, where the conditions are extreme and the views extraordinary

The Rabot Cabin was named after the French explorer, glaciologist and geographer Charles Rabot. It was he who first fully explored the mountains and glaciers of the county of Nordland, Norway, in the 1880s; at about the same time, in 1883, he became the first person to climb the tallest mountain in Sweden, Kebnekaise.

Designed by the architectural practice Jarmund Vigsnæs, the cabin serves as a shelter for hikers and mountaineers in the Okstindan mountain range, which includes the peak Oksskolten, the highest point in northern Norway. In such an extreme environment self-sufficiency was essential, as was a hard-wearing, durable, low-maintenance building that could cope with sub-zero temperatures and driving snow.

'The cabin is about 1,200 metres (4,000 feet) above sea level and very close to one of the glaciers,' says the architect, Ane Sønderaal Tolfsen. 'The setting is spectacular, but the weather can be extremely harsh and there is no infrastructure. There are very few cabins or other structures at this elevation in Norway.'

The only access is on foot or by helicopter, and the latter was used to bring in all the building materials. The cabin was largely built by local volunteers, using native spruce cladding, high-performance glazing and plywood for the interior joinery.

The irregular shape of the building evolved after studies of the snowdrift patterns on the site, as well as in response to the rugged topography and the views. There was also a need for flexibility in the layout of the cabin, which can accommodate between two and thirty visitors at a time.

The rhomboid structure contains a mixture of open communal spaces and simple cellular bedrooms on the ground floor, while a mezzanine holds a larger bunkroom. The floor plan was designed so that the cabin's communal zone could be divided in two when in use by fewer visitors, reducing the need for heating, which is largely provided by two wood-burning stoves that form focal points at each side. Electricity is generated by solar panels, and water must be pumped manually from a small lake nearby. A secondary emergency hut is nearby, in case of damage that might compromise the Rabot Cabin.

'The cabin has a calm and peaceful atmosphere, and both its location and the sense of connection with its surroundings are remarkable,' says Sønderaal Tolfsen. 'It encourages people to get outside and experience nature, which inspires closer contact with and an increased respect for the environment.'

On this page The refuge offers living/dining spaces at either end with a kitchen at the centre; wood burning stoves provide heat while water is pumped from the lake below the cabin

Opposite and overleaf The isolated, timber clad retreat was designed with a high performance shell, able to cope with accumulated snow and sub zero temperatures

Connecting with the Hawaiian Landscape

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FLOAT Architectural Research and Design: Outside House, Maui, Hawaii

1
– Simple Structures

Contextual design

→ The design of any bespoke home should begin with a detailed survey of the site and its specific conditions. This is especially true of an off-grid home in a remote or difficult location.

→ This should include an understanding of the landscape and its topography, in terms not only of the position of the new house but also of establishing connections with key sight lines and views.

→ Careful consideration must also be given to weather patterns, particularly any potential for extreme conditions. This includes an assessment of solar gain (see Passive Design, page 252) as well as, among other things, heavy snowfall, driving rain, strong winds and, for coastal locations, salt spray.

→ Ensure that you work with an empathetic and imaginative architect or designer who is willing to produce a contextual and site-specific response, based on a full understanding of the setting.

→ Take time to convey clearly to your architect the outcome you want, in terms both of aesthetics and of programme. A written brief helps to avoid misunderstandings.

→ Be willing to draw on the expertise and knowledge of other consultants and specialists. These should include surveyors and environmental consultants, who will be able to draw up impact assessments for the site.

→ Put time aside to keep an eye on the evolution of the project, even if you have a trusted architect and project manager in place. Involvement will help you avoid mistakes and compromises.

Planning

→ Establish legal clarity over your right to build on the plot. If in doubt, double- and triple-check the status of the site with the local planning authorities.

→ Most rural, coastal and isolated sites, particularly in national parks or other environmentally sensitive areas, come with planning restrictions that may affect how and what you can build. It is crucial that you understand and respect these restrictions.

→ Planning restrictions commonly include limits on height, size, materials and infrastructure, as well as (in coastal areas) distance from the shore. Such restrictions generally exist for good reason, and so should be seen as spurs to creativity rather than inconveniences. Engage with the local planning authorities and your architect to get a fuller picture of what may or may not be permitted on the site.

→ From the outset, consider carefully the accessibility of the site, looking at how isolation or limited infrastructure could affect the logistics of the construction process in terms of both practicality and cost.

→ Assuming that traditional utility services are either non-existent or limited, consider how water, heat and electricity can be reliably obtained (see later sections) and take advice accordingly.

→ Before any work begins on site, ensure that full and written planning permission is in place and that the local planning authorities are aware that construction is about to begin.

Programme

→ Draw up a brief or wish list for the design of the house with care and consideration, keeping in mind the impact the building might have on its site and setting.

→ Consider reducing this brief to its essentials, especially if the house is a holiday home or part-time residence that may not require the space and facilities of an everyday home.

→ Remember that a smaller floor plan means less visual and environmental impact, while also reducing the overall carbon footprint of the house, both in terms of the energy and materials required to build it and of the energy needed for heat and lighting. Essentially, a smaller house should require fewer resources of all kinds.

→ Flexible, adaptable and malleable rooms may allow a number of activities to take place in one space, such as cooking, eating and relaxing, while reducing the overall size of the structure.

→ Indoor-outdoor spaces such as verandas, porches, terraces and decks can be enticing areas for open-air living and help to reduce the physical footprint of the building. They are also essential in forging a strong connection with the surroundings.

2
– Light Touches

Treading lightly

→ Consider the height and outline of the building within the landscape, with the aim of balancing discreetness with a strong connection to the great outdoors.

→ Work with the shape of the land, seeking to place the structure within it. Tucking a building into a hillside or among the twists and folds of the landscape shows far greater respect than imposing an alien object on the countryside or coastline.

→ Keep an open mind to vernacular influences and local architectural traditions, materials and cladding, even within a decidedly contemporary design. Such inspiration can add depth and character, as well as helping the house to sit more naturally in the region.

→ Respect the privacy of any neighbouring houses, as well as your own, in the orientation of the building and the placing of windows and terraces. Look at subtle ways of mitigating any intrusion or overlooking, while keeping in mind public rights of access to the site.

→ A compound structure, consisting of a number of smaller buildings connected by outdoor rooms, may be a more contextual solution than one larger residence, and may create more opportunities for discreet positioning within the topography.

→ Seek to keep any outbuildings or complementary structures, including garaging and equipment stores, low-slung and discreet, and in keeping with the architecture of the main house.

Preserving habitats

→ Respect existing trees, flora and fauna as far as possible. Preserving and conserving the natural planting is not only environmentally responsible but also offers the possibility of a house that is in synergy with its natural surroundings.

→ Mature trees and planting will soften the impact of the building in the landscape, while also providing shade; natural water features, such as ponds and pools, may help to cool the house in the warmer months.

→ Green roofs and other sympathetic planting around the house can play a part in offsetting the impact of a new building, as long as the plants are suited to the location and climate.

→ Raising a building on slim pillars or piloti has become a common way of lessening its impact on the land, causing minimal disturbance in comparison with embedded foundations. Raising the living space on such a supporting platform also allows the possibility of removing or updating the structure later, leaving little if any trace on the site.

→ Carefully consider and plan any groundworks that may be required, such as underground rainwater storage tanks or drilling for a ground-source heat pump. Such tasks must be undertaken in a way that causes the least damage to the site, and they may need to be offset by land conservation measures or replacement planting.

→ Avoid unnecessary disturbance to the land wherever possible. Off-grid solutions should avoid the need to install long runs of cabling, water pipes or drainage to mains sewers.

Light Houses

→ A wealth of natural sunlight in the home not only increases the quality of the spaces but also reduces the need for artificial lighting; banks of well-positioned glazing also reinforce the connection between indoors and out.

→ Most houses in the northern hemisphere face south to make the most of the sunlight, while houses in the southern hemisphere are orientated to the north. Yet the orientation must be balanced with the demands of the setting and the response to the strongest views of landscape or coast.

→ Tucking courtyards, terraces and decks into the outline of the house may help to push natural light deeper into the building, serving as light wells as much as sheltered outdoor spaces.

→ Consider maximizing light in the more 'public' parts of the house that are most commonly used in the daytime; private zones and evening spaces such as bedrooms and bathrooms generally require less natural light.

→ Open-plan layouts and light-coloured surfaces help natural light to circulate through the home; staircases can also serve as light wells when top-lit by skylights.

→ Directing light from several openings, whether windows or skylights, enhances its overall quality considerably.

→ Additional sources of light, such as solar tubes, sun pipes or sun scoops, can introduce natural light into darker corners.

3
– Materials

Localism

→ Use locally available materials wherever possible in the interests of reducing transportation miles (which contribute to the carbon footprint of construction) and increasing contextuality.

→ Select materials that are appropriate to the climate and setting, while keeping aesthetics and sustainability in mind. Extreme settings, such as coasts or high altitudes, will demand materials that can cope with seasonal weather variation, high winds and → close to the shore → the corrosive effect of salt spray.

→ Consider the impact of weathering and seasonal extremes. Low-maintenance materials may be the best choice for holiday homes and buildings that are closed for periods when the house is not in use.

→ Balance the desire for low-maintenance materials with careful checks on any treatments applied to them, which may introduce toxicity or inappropriate chemicals to the environment.

→ Employ local skilled labour wherever possible, so as to reduce daily commuting time to the site and to draw on expertise in the unique conditions and qualities of the surroundings.

Organic Design

→ Seek sustainable sources wherever possible, including timber from responsibly managed forestry. Exercise particular caution with unaccredited suppliers. Buy timber locally or regionally, to be certain of the green benefits of sustainably grown wood.

→ Check the suitability of the timber for its intended purpose. Cladding, in particular, requires wood that is suited to the climate and conditions.

→ Make the most of the versatility and organic malleability of timber. Wood can, of course, be used in a huge variety of ways both internally and externally.

Architectural Plans

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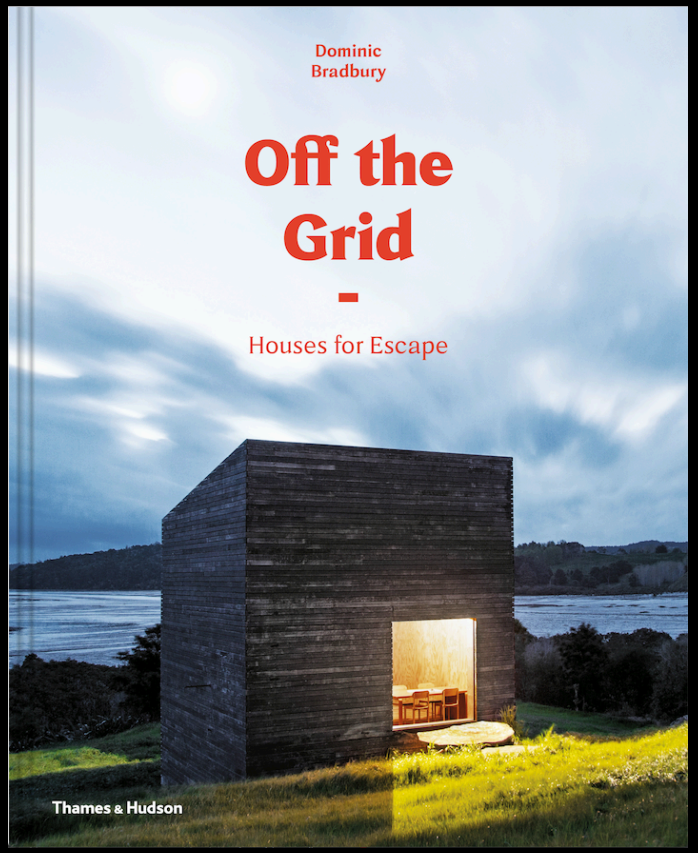

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