



THOMAS KYHN / ALAMY

Thatch

is back

Thatch almost disappeared across Europe in the aftermath of the Industrial Revolution. The exception is the low-lying and watery terrain of the Netherlands, where reed beds – and consequently thatch materials – were part of the vernacular. Though on life support through the 1960s, '70s and '80s, thatch did not die off during the country's industrialisation as it did in other European countries.

It was also the Dutch thatchers who led the technical development which has helped propel a wave of contemporary thatched buildings among architects: vertical thatching. After research and experiments, Maas Architecten, supported by the Dutch Thatching Federation (Vakfederatie Rietdekkers), designed and realised the first vertical thatched house in 2002: thatch covers the walls and folds across its pitched

roof, stapled to a concrete structure. This house in Gorssel set the template for hundreds of similar homes, first in the Netherlands, and then beyond. There followed fire testing, and other governmental certificates, which helped to bolster confidence in the material.

Fire is only one obvious source of caution: water penetration and moisture control are ongoing points of concern. There are risks of decay from micro-organisms such as fungi, although well-thatched reed and straw roofs and walls generally resist micro-organisms gaining a foothold, requiring little maintenance. Many thatch authorities will tell you the problems are more about perception and point to thatched roofs' longevity in the past. Air ventilation behind thatch is also contentious, highlighting the paradigmatic divide between traditions that use breathable materials and industrial

building; though thatch's permeability is celebrated by many thatchers and natural building professionals, air vents are often integrated into designs, including in the Netherlands.

Today, an average of 2,500 buildings with thatched roofs and walls are completed annually in the Netherlands – both new builds and conservation projects. But the agenda is not primarily about sustainability. A thatched roof or wall can sit on many materials and, in the Netherlands, the return of thatch has been significantly driven by the aesthetic desires of Dutch high earners willing to stump up for the buildings, rather than by a sustainability agenda: many examples continue to be upmarket houses.

However, there are increasing numbers of larger buildings using vertical thatching, dating back to Möhn + Bouman's Felsőord daycare centre from 2007, followed by hotels,

Thatch is enjoying a renaissance across northern Europe, but it is yet to fulfil its post-carbon potential, writes *Oliver Lowenstein*



ARCHITYPE / PHOTO: HENRIETTA WILLIAMS

Thatch has a long history: seaweed thatching began on the Danish island of Læsø in the 17th century (opening spread, left). Though thatch remains predominantly the remit of private houses, there have been recent forays into public buildings, such as Möhn + Bouman's daycare centre from 2007 (below left and below right), in Felsőord in the Netherlands. Thatch is now incorporated into prefabricated panels (opening spread, right), and Kaleidoskoop by LEVS Architecten (right) used the first thatch panelling system certified for fire risk when it was built in the Netherlands in 2012

offices, small apartment buildings, town halls, community centres, nature visitor centres and, symbolically, at least one fire station, which was designed by Van Rooijen Architecten and sits in the outskirts of Utrecht. LEVS Architecten's Kaleidoskoop, built in 2012 in the small Dutch town of Nieuwkoop, includes apartments for older people and has an upper floor decked out with thatch, sitting on top of a brick culture centre, the town's library, a performance hall and a café. For Kaleidoskoop, LEVS developed a reed-thatch panelling system, the first to be certified for fire risk.

Among some, there has been concern about the direction Dutch thatch architecture has been heading, with one leading Danish architect muttering darkly along the lines that the Dutch scene was doing its best to destroy thatch's architectural potential. This is not explicitly

a shift towards sustainability in the Netherlands; thatch is specified for buildings which use the gamut of mineral materials – steel, brick and concrete. Some thatched building design is good; some is bad. There seems to be very little research, and none I came across that involved academic departments in the country. Thatch's undoubted eco-potential is stuck in the starting blocks.

A recent exception to this – and a one-off rejoinder – is Woonhuis Lichtenberg, a small house in Amersfoort, designed by the young Dutch-German office 9graden Architectuur in 2022. Home to one of the directors, Yaïke Dunselman, it is a lovingly crafted three-storey house, its miniature volumes, carvings and cuts making the most of the material's sculptural possibilities. The architects have also made the most of thatch's crafted potential, with playful

braiding around the windows and ridge line. If a larger scale non-residential project expanded on this crafted care and sensuous sculpting, mixed thatch with MVRDV's punk sensibility, or if thatch got onto the agendas of OMA or Mecanoo, 21st-century Dutch thatch could finally get a helping of the buzzy splash and international recognition it deserves.

Denmark contains Europe's other lively, if considerably smaller, contemporary thatch scene, continuing a long tradition of Danish vernacular and rural building, and blurring over the border into northern German Schleswig-Holstein. With Germany in the middle, the Netherlands and Denmark are connected by the Wadden Sea, one of the largest intertidal regions in the world, running from the Dutch north-east up, along the north German coast, to Mid Jutland. All along these coastal waterlands, and,



MARCEL VAN DER BURG



JEROEN MUSCH

Woonhuis Lichtenberg Amersfoort, the Netherlands 9graden Architectuur 2022

Located on the site of a former hospital on the edge of the Veluwe forest, this new house takes its cue from the surrounding natural environment; planning regulations dictated that developments on the site could not 'simply be located elsewhere. They must respond to the specific characteristics and qualities of the place'. The chamfered facade is crafted from thatch: a contemporary, sculptural form materialised in a traditional material. The thatched volume sits above a ground-floor

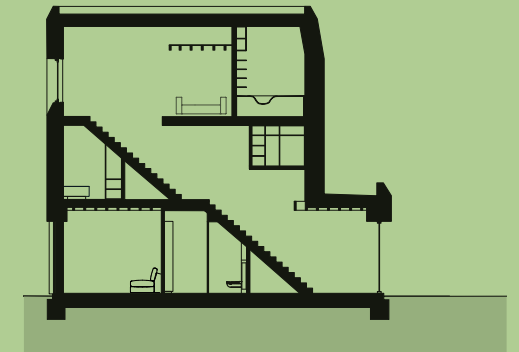
base clad in timber around large windows. The decorative reed wickerwork was completed by a specialist craftsman, and was carefully designed so that eave fascias and window sills could be omitted. The house's structure is made of timber, and internally, the rooms are lined with pine, including the walls, kitchen, dining table, beds, writing desks and stairs. The materials, both inside and out, will be allowed to age naturally, and the house is well insulated to minimise energy usage.



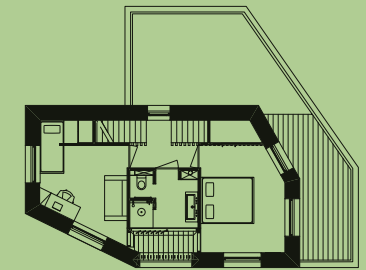
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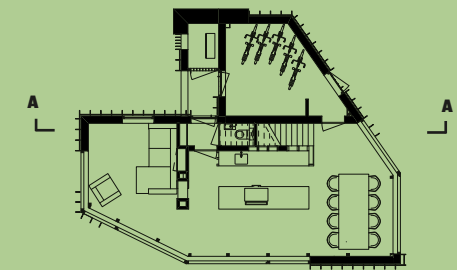
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section AA



first floor



ground floor plan



9GRADEN ARCHITECTUUR

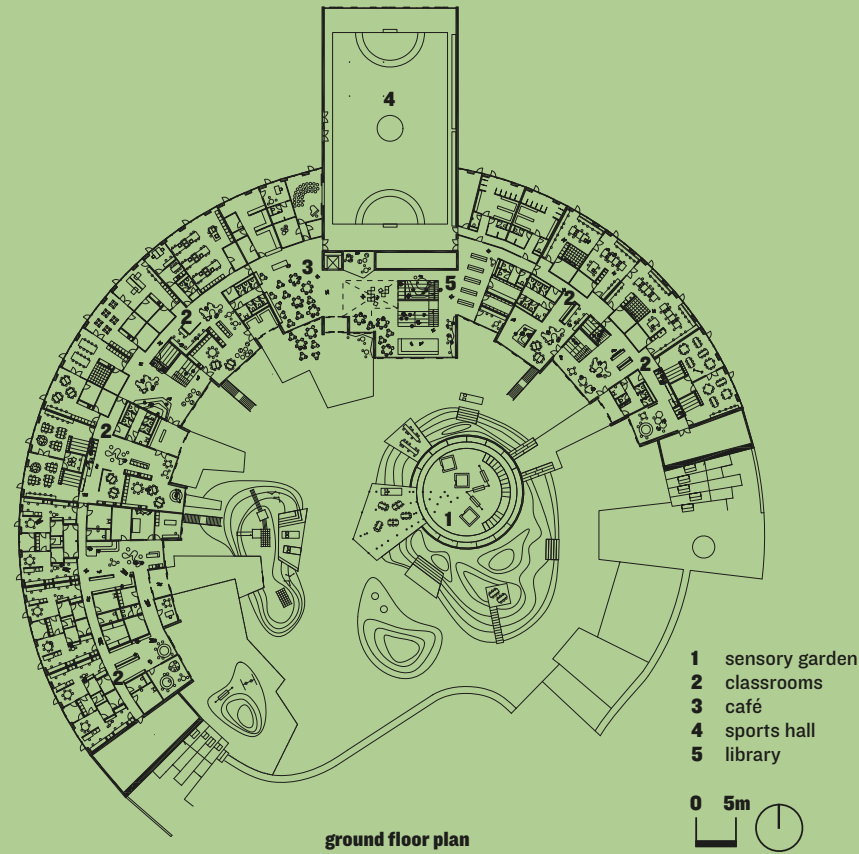
Sundby School
Nykøbing Falster, Denmark
Henning Larsen
2023

This new primary school will be the first in Denmark to be awarded the Nordic Ecolabel, the region's official sustainability certification based on a range of parameters for energy consumption, indoor climate and use of sustainable materials. Part of this certification is due to its thatch facade, which wraps around the building's circular plan. The school, which will accommodate around 580 students when completed later this year, encircles a protected play space; some rooms look inward, while others look out over

the surrounding landscape. Located on the edge of town, the design takes advantage of the school's proximity to nature and aims to bring the outdoors in – the school has no perimeter fence and students are able to explore the surrounding environment. The sloping roof touches down at ground level and can be accessed by the public; the new school will also comprise spaces such as a library, a café, and sports and music facilities that will be available to the local community after school hours.



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Danish architects have also experimented with thatch, including a house by architects Vandkunsten (left and far left), completed next door to the original seaweed houses on the island of Læsø. Dorte Mandrup Arkitekter's Wadden Sea Centre (below left and below right) was based on the traditional thatched farmhouses common in the region

to an extent, inland, thatch has been a principal vernacular material, now resuscitated in contemporary form.

Radical in conception and execution, the Wadden Sea Centre by Dorte Mandrup Arkitekter, completed on the west Jutland coast in 2017 (AR April 2018), not only put vertical thatch on the Danish architectural map, but its sculptural sensibility meshed architecture with landscape. Along Jutland's west coast – holidaying land for Danes and Germans – there are a smattering of high-end examples, as in the Netherlands; holidays and their implicit away-from-it-all escapism have been a major spur for using a material which connects to a rural romanticism. These include Norrøn Architects' Åstrup Have from 2020, a concrete reworking of the regional vernacular Haubarg long house, and Jan Henrik Jansen and Marshall Blecher's

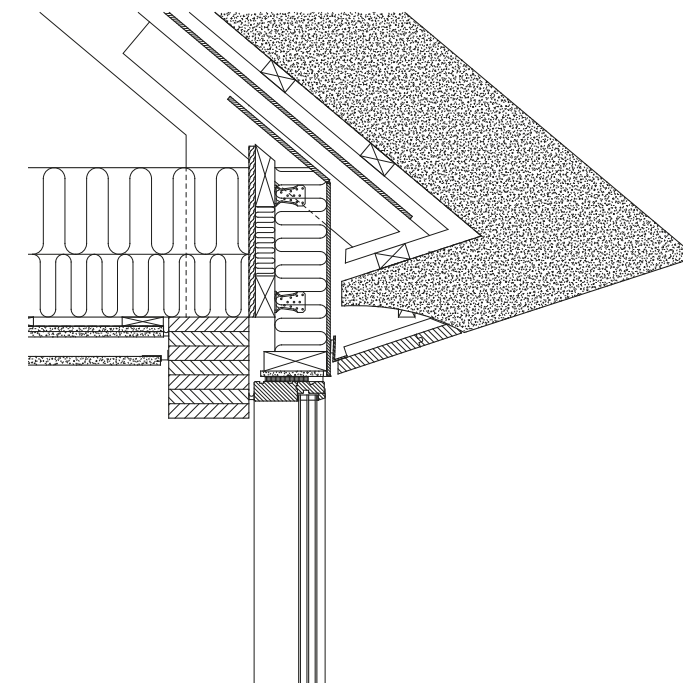
Nieby Crofters Cottage restoration in northern Germany, completed last year, which integrates thatch into a mix of old and new materials.

The clearest example of the appeal of thatch to high-end escape and holidaying is Lanserhof Sylt from 2022, a private wellness resort on Sylt, one of the German islands off Jutland, known as a playground of the rich – Germany's very own Hamptons. Designed by 'supergreen' architect Christoph Ingenhoven, the health complex boasts the largest – 7,100m² – thatched roof in Europe, with hefty overhangs extending out above glazed curtain walls. Ingenhoven has been central to Germany's high-tech corporate sustainability industry. From afar it is difficult to read his practice's turn to thatch as anything more than superficial spectacle and, though good for the thatchers employed in its construction, a distraction from

thatch's deeper sustainable potential.

The Danish and north German private houses have helped, marginally, with a growing research and knowledge base, supporting momentum behind broader bio-based materials. Notable projects include Vandkunsten's Modern Seaweed House from 2013 on Læsø island and House Arkitekter's Breathable House (Det Åndbare Hus) from 2019, which includes vertical thatch while also being a testing bed for miscanthus (elephant grass).

There are also several high-profile examples of thatched buildings outside the Netherlands and Denmark that have been completed in the last decade or so, including the Naturum Tåkern visitor centre in Sweden, designed by Wingårdhs in 2012. Sitting on the edge of Lake Tåkern, the Naturum is decked out in reed thatch, the rough organic fibres projecting sculptural

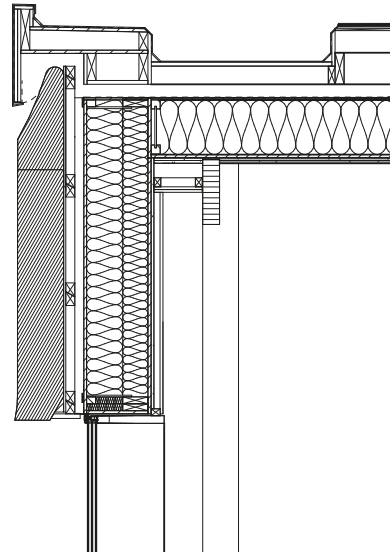


RASMUS H. JØRTSHØJ



DENNIS GILBERT / VIEW / ALAMY

‘An average of 2,500 buildings with thatched roofs and walls are completed annually in the Netherlands. But the agenda is not primarily about sustainability’



presence and physicality. The architects made an obvious connection between nature centres and natural materials, and they are not alone. Tåkern was followed by Guinée*Potin’s 2013 Beautour Biodiversity Centre, on the Atlantic coast of Brittany. Thatch’s sculptural elements come to the fore, though Beautour’s lines are curved and organic compared with the clear, sharp angles issuing from the far north. In the UK, Architype’s UEA Enterprise Centre from 2015 is a showcase of natural materials, featuring a thatch cassette panel system around the upper faces of the building.

Just how sustainable these projects are is an open question. The Enterprise Centre stacked up some impressive performance data, and the cassette system acted as an effective rainscreen. But the UK’s ‘greenest building’ did not advance what, for some, is thatch’s greater green promise as a bona fide

insulation material – the Enterprise Centre included insulation in addition to the thatch cladding, despite 300mm-thick thatch having a U-value equivalent to an insulated wall. And ask Kasper Pilemand, the Wadden Centre’s project architect, if the building’s steel structure would have been timber today, and there is no hesitation: ‘Yes, absolutely,’ he says. He continues to note that there are not nearly enough precedents to help integrate thatch into larger-scale building systems.

Research into thatch construction is, however, beginning to bear fruit. Denmark’s largest studio, Henning Larsen, has begun to integrate bio-based materials into their portfolio, including a school with an extensive thatch wall. Sundby School is organised into a semi-circle, with its entire outer facade featuring a raised first-floor vertical thatch wall. Primarily built from

timber, and with various bio-based materials, including straw panels and seaweed, this is where thatch’s sustainability journey currently stands. How far will Henning Larsen take this new thatch and bio-based direction? In a breathless statement, Jakob Strømmand-Andersen, Henning Larsen’s director of innovation and sustainability, explains that: ‘The latest IPCC report gives us an extremely small window of opportunity for keeping global temperature increase to a maximum of 1.5 degrees Celsius: just a decade. We know that we cannot wait for policymakers to push the green agenda; we must face the weight of our design decisions headfirst, altering our practices, bettering ourselves, and pushing our industry.’ Hopefully Sundby School will not turn out to be another high-profile one-off, and will move thatch towards a broader spectrum of building types.



WILLY BERRÉ

Thatch was added by hand to the facade of the Beautour Biodiversity Centre (left and right) in La Roche-sur-Yon, in western France, while the thatch cladding of the Enterprise Centre at the University of East Anglia in the UK (above left and above right) was installed in prefabricated thatch cassette panels. It was dubbed the country’s greenest building when it was completed by Architype in 2015



SERGIO GRAZIA

Beautour Biodiversity Centre extension La Roche-sur-Yon, France Guinée*Potin Architectes 2023

In 2013, French architects Guinée*Potin completed the museum and biodiversity centre in La Roche-sur-Yon – a thatched appendage to a historical mansion. Ten years later, the architects are completing further transformations to the site in western France. The Potager Extraordinaire (Extraordinary Vegetable Garden) project includes the installation of an educational and operational farm, greenhouses and a trail through the grounds. The new farm buildings are built with timber frames

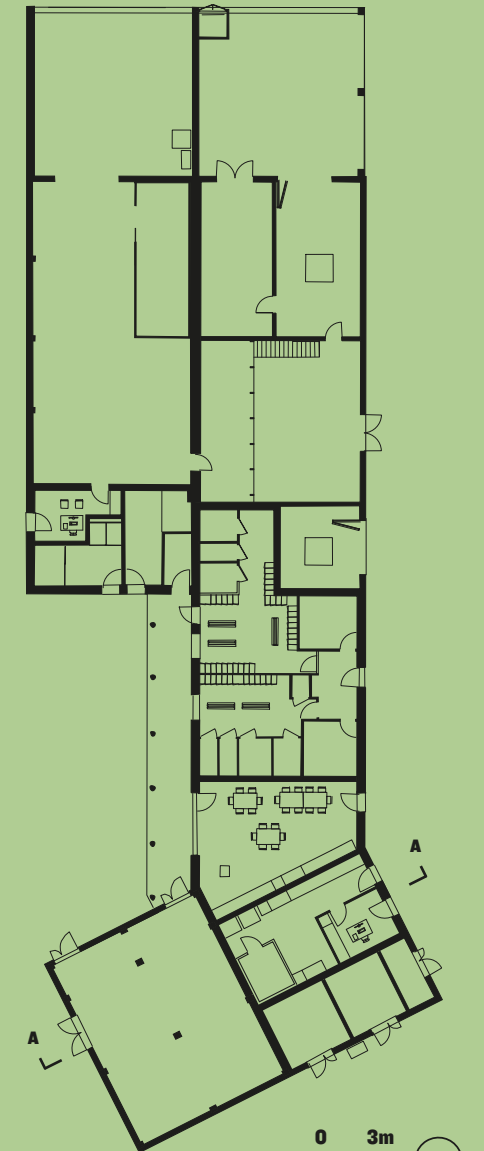
and clad in black-stained timber. The roofs are partially thatched and partially corrugated polycarbonate, in a recapitulation of local agricultural buildings. The roof also carries an array of photovoltaic panels. A key concern for the project is mitigating the impact of visitor traffic on the ecology of the site, and interventions in wetlands and other fragile ecosystems have been limited. The route passes through gardens of edible plants, botanical collections and a plot of land used for intensive organic farming.



section AA



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ground floor plan



In rural areas of England, specialist thatchers turn their hand to elaborate decoration, including straw finials in the shape of various local fauna. Tight straw ensures that the thatched friends withstand many years perched on the roof's ridge



SPK/ALAMY