

Árni Magnússon Institute for Icelandic Studies

REYKJAVÍK, ICELAND

The Edda Building on the University of Iceland campus is the purpose-built home for the Árni Magnússon Institute for Icelandic Studies. It is both a research hub and a public-facing cultural venue. From a program standpoint, the building intentionally combines several risk profiles—historical preservation, public exhibition, and academic pursuits—all under one roof,¹ and being surrounded by volcanoes. While Icelanders respect their volcanoes, they do not live in fear; in fact, some name their girls after volcanoes.

Finally, everything in one place

The priceless collection in the Edda Building consists mostly of medieval Icelandic sagas, laws, poetry, genealogies, and religious texts written on vellum from 1100 to 1600. In a 40-year quest, from 1680 to 1720, world-renowned Icelandic scholar Árni Magnússon tracked down and assembled the documents at his home in Copenhagen. Shortly before his death by natural causes in 1730, Magnússon bequeathed his collection to the University of Copenhagen in Denmark, where it was preserved for 240 years until 1970. That year, Denmark recognized the collection as Icelandic Cultural Property, and, over the next 26 years, dozens of shipments adhering tightly to museum-grade preservation protocol, arrived in Iceland to the care of a dedicated national manuscript institute. The institute chose Árni Magnússon as its namesake in 2006 and began to consolidate the collection in the new Edda Building in 2023. As consolidation continues, the collection grows.

Volcanic threat to the Edda Building is airborne

Reykjavik, the hometown of the University of Iceland and the Edda Building, shares a small peninsula with four major volcanic systems. Lava-producing eruptions have occurred on the peninsula every year from 2021 to 2025. While the destructive power of lava is the first concern for locals, volcanoes also spew plumes of highly corrosive sulfur dioxide (SO_2) gas—a big concern for museum preservationists.

To make matters better but then worse, friendly offshore winds late in the day can blow a plume of sulfur dioxide gas out to sea. As the plume drifts, the gas changes chemical form and becomes laden with sulfate (SO_4) ions, which interact with water vapor and other gases in the air to form even more corrosive sulfate aerosols. Onshore winds the next morning bathe the peninsula with these aerosols.²

If allowed unhampered into the Edda Building, the aerosols would cause significant damage to the collections. Yet, basis of design for the building is 100 percent outside air.



The Edda Building design emphasizes sustainability and integration with the landscape.



The collection is on the United Nations Educational, Scientific and Cultural Organization (UNESCO) Memory of the World Register in recognition of its global significance and irreplaceable documented heritage for Scandinavian and European history.³



An edda is a medieval Icelandic collection of texts that preserves the mythology of the Norse world. The Edda Building is situated in a shallow reflection pond to echo the concept of culture preserved and revisited.



Nine thousand manuscripts spend most of their time in darkness of secure storage, only seeing the light of day when rotated into the exhibits for short intervals in sealed display cases.

RESOURCES

Árni Magnússon Institute for Icelandic Studies:
<https://arnastofnun.is/en/institute>

RTS humidifiers:
<https://www.dristeem.com/products/steam-generation/rts-humidifier-rx-series/>

Rapid-sorb dispersion tube systems:
<https://www.dristeem.com/products/steam-dispersion/rapid-sorb-dispersion-tube-system/>

Find your local DriSteem representative:
<https://www.dristeem.com/find-a-rep>

DriCalc® free sizing and selection software:
<http://www.dristeem.com/register-for-dricalc>

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Project team specifies DriSteem humidification, mitigates outside air risk

While the need for humidification in the new Edda building is critical and undisputed, the project team was confronted by the fact that any sulfate aerosols allowed into the building would interact with the humidity in the air and make the situation even worse.

The solution to the problem, now in effect in the Edda Building, is monitoring and prevention. Outside air entering the Edda Building, passes through prefilters, secondary filters, and molecular filters, while air in the building is monitored in real time for temperature, humidity, and corrosive gases. In an emergency, outside air can be limited to zero.

This allows for humidification with all the benefits of outside air and none of the worries. Humidification for the exhibit areas is generated by a DriSteem RTS® electric steam humidifier, chosen for its precise controllability, and dispersed with a DriSteem Rapid-sorb® steam dispersion panel.

Herdís Björg Rafnsdóttir is the CEO of RJ Engineers, DriSteem's rep agency for Iceland. Recalling the inestimable value of the collection and the environmental factors confronting the project team, she said, "So many consultants, architects and contractors, and their work is *undraverður*." Amazing work. *Herdís* in folklore is a Nordic war goddess and the namesake for Herdísarvík Bay on the Reykjanes Peninsula—a landscape shaped by persistent volcanic activity.

SOURCES

1. Edda: History & Design
<https://arnastofnun.is/en/edda-history-design>
2. Volcanic Gasses. Icelandic Meteorological Office.
<https://en.vedur.is/volcanoes/volcanic-hazards/volcanic-gases/>
3. UNESCO Memory of the World. Arnarnagnæan Manuscript Collection.
<https://www.unesco.org/en/memory-world/arnarnagnæan-manuscript-collection>