Beyond Transport:
Cable Car and Funicular Stations as Heritage in the Hallstatt-Dachstein/Salzkammergut Cultural Landscape

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ABSTRACT

Cable car and funicular stations are a specific form of built cultural heritage. While such structures are commonly regarded as technical infrastructure, they often also possess architectural, historical, and contextual value. Observations show that contemporary interventions are frequently justified through technical upgrading, accessibility, and capacity increase, whereas the role of preservation and architectural continuity often remains insufficiently examined. Using a comparative case-study approach, cable cars and funiculars in the Hallstatt-Dachstein/Salzkammergut region were examined. The case studies were analysed according to their historical development and the strategies applied for refurbishment, replacement, or reuse. Finally, criteria for evaluating future interventions in cable car and funicular stations, particularly in historically sensitive contexts, are proposed, contributing to a broader discussion on the heritage value of technical transport infrastructure.

1. Introduction

Cable car and funicular stations are generally understood as elements of transport infrastructure. At the same time, many of these buildings are embedded in historically significant landscapes and carry architectural, cultural, and symbolic value. They do not only organise movement, they also shape the arrival, perception, and representation of alpine sites. In some cases, they form part of larger cultural landscapes or tourism histories and therefore raise questions that go beyond technical performance.

The topic becomes especially relevant when aging stations are renovated, expanded, or replaced. In recent projects, interventions are often justified by higher capacity requirements, accessibility standards, safety regulations, and economic efficiency. However, it remains unclear to what extent such arguments are balanced with a serious consideration of the architectural character, historical fabric, and contextual meaning of existing stations. This creates a field of tension between technical modernisation and heritage sensitivity (Luger and Rest, 2002).

The research starts from the assumption that cable car and funicular stations should not automatically be treated as purely technical infrastructure. Instead, they should also be understood as heritage-related objects whose value may lie in their historical importance, material substance, typology, spatial setting, function and role within a regional cultural landscape. The problem addressed by the paper is therefore how different protection and renovation strategies deal with this value and how such strategies can be critically assessed.

A particular point of interest is the current replacement of the Hallstatt Salzbergbahn and the announced future intervention at the Gosaukammbahn. These cases raise the broader question of whether replacement is presented as an unavoidable necessity, or whether refurbishment and adaptive reuse could offer more heritage-conscious alternatives.

2. Methodology

The analysis uses a comparative case-study approach. It examines selected cable car and funicular stations regarding their historical development, architectural design, technical transformation, and current treatment within renovation or replacement processes. The comparison focuses on stations that make different approaches visible and therefore allow a critical reading of preservation strategies.

The case studies cover a range of renovation and modernisation approaches in historically sensitive contexts. Examples have been selected according to their relevance for questions of refurbishment, reuse, or architectural continuity, spanning intervention types from complete replacement to ongoing operation without significant alteration. This range allows for a comparative reading of how different operators, planners, and heritage institutions approach the transformation of historically embedded transport infrastructure.

The research draws on several complementary methods. A systematic literature review covers heritage conservation theory, technical monuments, alpine infrastructure, and tourism architecture. This is supplemented by research into the historical development of the selected stations through archive material, historic photographs, project descriptions, and planning documents. Each station is then subject to an architectural analysis addressing form, materiality, construction, landscape integration, and typological characteristics. A comparative analysis examines the arguments used to justify renovation, preservation, or replacement in each case, with particular attention to recurring justifications related to capacity, accessibility, economics, and heritage sensitivity. Where feasible, published statements by operators, planners, or heritage institutions are evaluated to supplement the documentary sources.

3. Cable Car and Funicular Stations as Heritage-Related Infrastructure

3.1 Between technical infrastructure and cultural value

Cable car and funicular stations occupy an ambiguous position in the built environment. They are, by definition, elements of technical infrastructure, designed to serve a transport function, optimised for mechanical performance, and subject to regulatory and safety requirements that drive much of their transformation

over time. Yet this functional definition does not fully account for the role these structures play within their contexts. Many stations, particularly those built during the first decades of alpine tourism, from the late nineteenth century through the postwar period, have become embedded in the cultural memory of their sites. They do not merely facilitate access. They have come to represent it. In some cases, the journey itself becomes inseparable from the experience of the destination. The Dachstein Krippenstein cable car, for example, provides access to the Five Fingers viewing platform, the Dachstein Ice Caves and exhibition spaces within the mountain landscape. As a result, the stations operate not only as transport infrastructure but also as part of a broader spatial and cultural experience.

The question of whether such structures can be considered heritage objects is not self-evident. Heritage recognition has traditionally been extended to buildings with clear historical, aesthetic, or associative significance, such as palaces, churches, and urban ensembles. Technical infrastructure, by contrast, has long been treated as subordinate to its function, replaceable once performance declines. This attitude is reflected in the systematic renewal of alpine cable car systems across Austria and the broader Alpine region, where aging stations are regularly demolished and replaced with larger, technically advanced facilities, often without serious consideration of their architectural or historical character.

A theoretical basis for reconsidering this position can be found in Alois Riegl's concept of monument values. Riegl argued that heritage value is not a fixed property of objects, but a relational construct shaped by historical distance, material age, and collective memory. His distinction between Alterswert (age-value), the visible traces of time inscribed in the fabric of a building, and historischer Wert (historical value), the documentary significance of a structure as evidence of a past moment, offers a useful framework for evaluating cable car stations. A mid-century station building may lack the formal prestige of a canonical monument while still possessing significant age-value and functioning as a primary document of alpine modernisation, tourism development, and postwar construction culture (Riegl, 1903; trans. 1982).

This broader understanding of heritage is grounded in international frameworks established over the second half of the twentieth century. The Venice Charter (1964), adopted by ICOMOS in 1965, extended the concept of the historic monument beyond individual architectural works of high artistic quality to encompass the "urban or rural setting" in which a building operates, a formulation directly relevant to cable car stations situated within significant cultural landscapes (ICOMOS, 1964). The UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972) further established the principle that certain sites constitute the "common heritage of mankind" and require international cooperation for their protection (UNESCO, 1972). Within the Hallstatt-Dachstein/Salzkammergut UNESCO World Heritage Site, inscribed in 1997, any intervention in the built fabric, including cable car and funicular stations, must therefore be assessed against these international obligations. The region's development over more than 7500 years as a cultural landscape is shaped by continuous human activity. Cable car and funicular stations, as part of the infrastructure that mediates access to and perception of this landscape, can therefore be understood as falling within the scope of this protection, even where they are not individually listed as monuments. This broader understanding of heritage is supported by the growing field of industrial and technical monument preservation, which has increasingly extended its scope to include transport infrastructure. Railway stations, bridges, and industrial plants have been recognised as heritage objects in Austria and internationally, yet cable car and funicular stations have received comparatively little attention within this discourse. Their relatively recent construction dates, functional appearance, and peripheral landscape settings have contributed to their low visibility within heritage frameworks. This is particularly striking given that these structures are anything but invisible in the physical landscape. Cable car and funicular stations are large, technically prominent buildings, often occupying exposed positions at valley entrances or mountain ridges, and form recognisable landmarks within the very cultural landscapes whose heritage value is being protected. The present study proceeds from the assumption that this gap between physical presence and heritage recognition represents a critical oversight, particularly in historically sensitive regions where technical transport infrastructure is inseparable from the cultural history of alpine tourism.

3.2 Spatial role: arrival, perception and landscape mediation

Beyond their technical function, cable car and funicular stations perform, according to our own experience, a specific spatial and experiential role. They are threshold structures. A threshold, in the architectural sense, is a space that mediates between two different conditions, in this case the familiar world of the valley settlement and the alpine landscape above. The station building organises and frames this transition. It determines the quality of arrival, the moment of departure, and the spatial sequence through which visitors pass as they move between ground and mountain. In this sense, the station is not merely a technical endpoint but an architectural event, a moment of spatial and perceptual intensification.

This threshold character is especially pronounced at valley stations, which typically mediate between the infrastructure of the settlement, roads, car parks, village centres, and the beginning of the vertical journey. The spatial organisation of the entry sequence, the orientation of waiting areas towards the departing gondola or funicular cabin, the framing of views towards the mountain, and the transition from interior to platform all contribute to the experiential quality of the station as an architectural space. Contemporary projects have made this mediating role explicit through their design concept of the station as gateway, a structure that organises the passage between settlement and mountain rather than merely processing transport demand. This articulation confirms that the spatial role of cable car stations is recognised in contemporary practice, and raises the question of whether older stations perform a comparable spatial logic, often less consciously but no less effectively.

At the mountain station, the threshold operates in reverse. Visitors arrive enclosed in a cabin and are discharged into a building that must organise the transition from technical enclosure to open alpine space. The quality of this transition, whether abrupt or carefully mediated, whether the building orients the visitor towards the landscape or merely processes them through it, constitutes a significant dimension of the architectural performance of the station. Contemporary high-altitude stations have addressed this problem through formal strategies of landscape integration, using material choices and spatial sequences that seek to create a dialogue with the surrounding mountain scenery. Older stations negotiate the same problem through different means, through modest scale, material

continuity with local building traditions, and spatial sequences adapted to the specific topographic conditions of their sites.

The role of cable car stations as instruments of landscape perception also extends to their visual presence within the landscape itself. Station buildings, particularly those at exposed mountain positions, are visible from considerable distances and contribute to the visual character of alpine settings. In the context of a UNESCO World Heritage landscape, the formal and material character of station buildings is not a peripheral concern. New construction, replacement, or alteration at such stations has direct consequences for the visual integrity of a landscape internationally recognised for its cultural and natural significance (UNESCO, 1972). The Venice Charter's stipulation that "the conservation of a monument implies preserving a setting which is not out of scale" and that "wherever the traditional setting exists, it must be kept" applies with particular force to cable car stations embedded within protected cultural landscapes (ICOMOS, 1964). Any evaluation of proposed interventions must therefore consider not only the architectural character of the station building itself, but also its contribution to the larger visual and experiential landscape in which it operates.

3.3 Typological and architectural characteristics

The development of cable car and funicular infrastructure in the Salzkammergut was closely tied to the expansion of alpine tourism from the late nineteenth century onward. The early stations served a clientele that came primarily from urban centres, seeking access to the alpine landscape as a recreational and cultural experience. Later, postwar construction reflected a democratisation of mountain access, with systems designed for broader public use rather than a few wealthy individuals. Understanding this shift in intended audience is relevant for evaluating the architectural character of different generations of stations. (BMIMI, 2026)

Cable car and funicular stations represent a recognisable building type, yet one whose formal and material expression has shifted considerably across the historical arc of alpine tourism development. We identified three broad typological phases, corresponding to the major periods of cable car construction in the Austrian alpine region (Gross, 2011).

The first phase, spanning roughly from the late nineteenth century to the late 1920s, produced station buildings that drew on the formal vocabulary of the contemporary tourist infrastructure, hotel architecture, railway stations, and alpine huts, adapted to the specific requirements of the cable car or funicular. The dominant stylistic influence was the Heimatstil, an architectural mode characterised by the use of timber on the facade, steeply pitched roofs, and ornamented eaves, which associated the new transport infrastructure with the regionalist imagery of alpine vernacular architecture. This formal strategy was not merely aesthetic. It was a deliberate effort to domesticate the technical novelty of the cable car within a culturally familiar visual language. An early counter-example is provided by the Predigtstuhlbahn in Bad Reichenhall (1928), whose mountain and valley stations were designed in the Neue Sachlichkeit style, architecturally reduced to essential function, with deliberate avoidance of timber as a material, creating a conscious contrast to the alpine hut tradition and appealing to a more urbane clientele. (predigtstuhlbahn.de, 2026)

The second phase, corresponding to the major wave of postwar construction from the late 1940s through the 1960s, produced the typology most directly relevant to the present study. The postwar stations are characterised by pragmatic construction methods, reinforced concrete or masonry bearing structures, flat or low-pitched rooflines, and a modest scale calibrated to the operational requirements of the time rather than to questions of architectural representation was very noticeable to us during our visits to those stations. The stations of the Dachstein Krippenstein system (1951), the Gosaukammbahn (1968), and numerous comparable examples in the Salzkammergut region belong to this typology. These buildings were designed as functional infrastructure without strong formal ambitions, yet their material solidity, their scaled relationship to the surrounding landscape, and their historical embeddedness have given them a quality of presence that is difficult to replicate in contemporary replacement structures.

The third phase encompasses the contemporary generation of cable car architecture from the 1990s to the present, which has increasingly been understood as an opportunity for architectural expression and landscape design. Contemporary stations, ranging from parametric shell structures to landscape-integrated earthwork buildings, tend to be significantly larger than their predecessors due to increased capacity requirements, incorporate hospitality and retail programmes alongside the transport function, and are frequently designed by recognised architectural offices as landmark buildings for their operators and regions. (Maria-Cristina, 2024)

This shift raises the question of whether the replacement of a modest but historically embedded postwar station with a large-scale contemporary facility constitutes an architectural upgrade, or a loss of the specific spatial and material character that gave the original building its contextual identity. The answer is not straightforward. Contemporary stations frequently invoke regional identity through formal gestures, materials, surface textures, or symbolic shapes derived from local culture or landscape, while their overall scale, massing, and spatial logic remain fundamentally at odds with the historic environments in which they operate. This gap between symbolic reference and genuine contextual integration is a central problem in the current transformation of alpine transport infrastructure, and it is the problem this study seeks to examine through the lens of the selected case studies.

4. Case Study: The Dachstein Krippenstein Seilbahn

4.1 Description and Geographical Context

The Dachstein Krippenstein Seilbahn is a major three-section reversible aerial tramway located in Obertraun, directly north of the Dachstein massif in the Upper Austrian Salzkammergut region. Unlike the urban-adjacent scale of the Salzbergbahn in neighbouring Hallstatt, the Krippenstein system operates within a high-alpine topographically complex landscape, functioning both as winter sports infrastructure and a year-round gateway to the Dachstein plateau and its famous ice caves. The valley station (Talstation) sits at an altitude of approximately 600 metres in a forested valley basin, while the mountain station (Bergstation) reaches the exposed alpine karst landscape of the Krippenstein at 2,100 metres. (DEEF – Dokumentationszentrum)

4.2 Historical Development and Engineering Context

The first section of the Dachstein Krippenstein cable car entered operation in 1951, establishing a direct connection between Obertraun and the Schönbergalm plateau. A second section extending the route towards Krippenstein followed in 1956. The

system was engineered and manufactured by the Vorarlberg-based company Ludwig Steurer Maschinen- und Seilbahnbau. Over the following decades, the infrastructure underwent a series of technical upgrades and modernisation measures in response to changing operational and safety requirements. While the mechanical components of the system have been progressively renewed, the primary station buildings have largely retained their original architectural character and continue to reflect the restrained architectural language of early postwar alpine infrastructure (Austria Forum, n.d.; Steurer Seilbahnen, n.d.).

4.3 Architectural Analysis

4.3.1 The Valley Station (Talstation)

The valley station complex presents a dual architectural character, split between a traditional regional reception facade and a strictly functionalist, heavy-engineered terminal at the rear where the mechanical forces of the cableway are anchored.

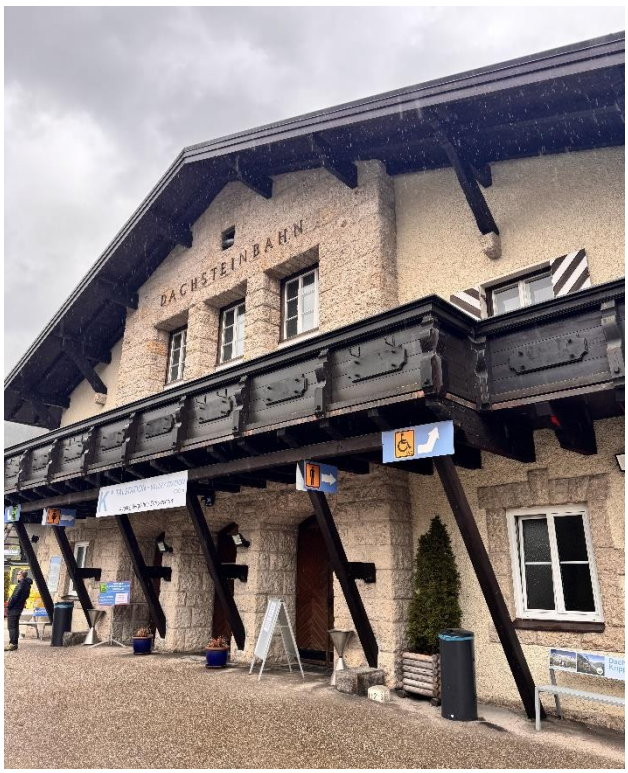

Figure 1. Front Facade, Valley Station, The Dachstein Krippenstein Seilbahn, April 2026 (Necdet Tankut Cerit)

The Main Facade: The public-facing southern elevation adopts the Heimatstil. It features a symmetric, solid masonry construction covered in a light-coloured smooth render, dominated by a prominent gabled roof with dark-stained timber eaves and exposed structural rafters. The central bay is defined by three vertical axes of multi-pane rectangular windows framed by dressed ashlar stone blocks. This stone framing extends down to the ground level, reinforcing an aesthetic of structural permanence and rootedness. A continuous, heavy wooden balcony with dark balustrades spans the first floor, acting as a visual shading element for the ground-floor entry portals. Traditional window shutters with diagonal stripes add a highly localized, domestic decorative motif to an otherwise massive infrastructure hub (see Figure 1).

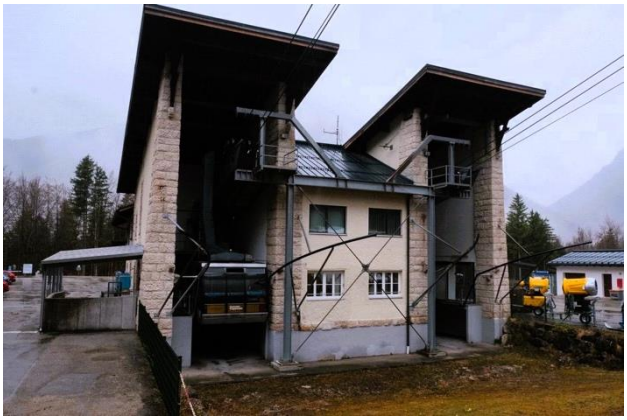

Figure 2. Cable Terminal, Valley Station, The Dachstein Krippenstein Seilbahn, April 2026 (Philip Nilsson)

The Cable Terminal and Track Framework: Immediately behind this traditional front building, the architecture shifts abruptly to a raw, industrial-functionalist logic. The cable entry portals are flanked by two massive, symmetric towers constructed from solid, dressed limestone masonry blocks. These monolithic stone pillars act as monumental buttresses designed to express and physically counteract the immense lateral tensile forces of the track cables. The roof over the cable bays is split into two dramatic, upward-sloping mono-pitched structures lined with dark timber, matching the angle of the departing cables. The boarding area between these towers features an exposed steel cross-bracing matrix (X-bracing) and expansive glazing on the upper floors to maximise visibility for the cable car operators (see Figure 2).

4.3.2 The Mountain Station (Bergstation) – Krippenstein

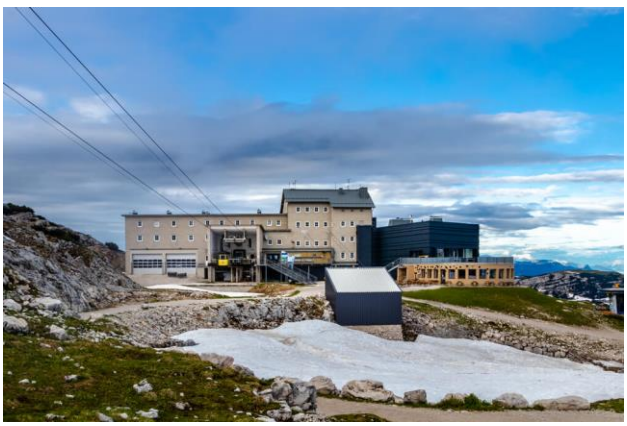

Figure 3. Mountain Station, The Dachstein Krippenstein Seilbahn (Melanie Deisl)

Situated in an unforgiving high-altitude environment characterised by extreme wind loads, heavy snow accumulation, and sub-zero temperatures, the mountain station abandons regional decorative motifs in favour of a monumental, fortress-like defensive architecture.

The Bergstation is a sprawling, multi-storey monolithic complex that integrates the cable car mechanical terminal, passenger circulation areas, a large high-alpine guesthouse, and meteorological, telecommunication infrastructure into a single unified perimeter. The building forms a massive horizontal

barrier against the ridge, utilising a highly functional, cellular layout with rows of small, square windows designed to minimise thermal loss and maintain structural integrity against alpine gales (see Figure 3).

The building is finished in a uniform, utilitarian grey cement render that blends texturally with the surrounding exposed karst limestone rock formations during the snow-free months. The roofscape is predominantly flat or low-pitched, designed to prevent massive snow drifts from overloading specific structural points. The cable car docking bay is integrated directly into the western flank of the concrete mass, featuring large rectangular openings where the cabins disappear directly into the belly of the building. The stark, unornamented facades and sheer scale of the complex reflect a mid-century architectural approach where survival, functional containment, and engineering dominance over the high-alpine climate took complete precedence over aesthetic integration.

4.4 Transformation Over Time and Current Condition

While the architectural shells of both the valley and mountain stations have been preserved in their core historical forms, their internal programmatic layout and immediate surroundings have evolved substantially.

Originally built to transport hikers, mountaineers, and early ski tourists with basic utilitarian comfort, the spaces have been progressively retrofitted to handle modern mass tourism. At the valley level, the open apron has been heavily asphalted and re-organised with contemporary electronic ticketing turnstiles, digital information signage, and expanded parking facilities to handle high-throughput tour bus traffic. At the mountain station, the building's envelope has been modified to support panoramic viewing platforms and modern indoor restaurant facilities, shifting the site from a basic alpine transit station to a highly commercialized high-altitude leisure hub. Unlike newer, fully glazed contemporary stations, however, the Dachstein Krippenstein structures still clearly legibly communicate the heavy, masonry-dominated structural paradigm of early postwar Austrian engineering.

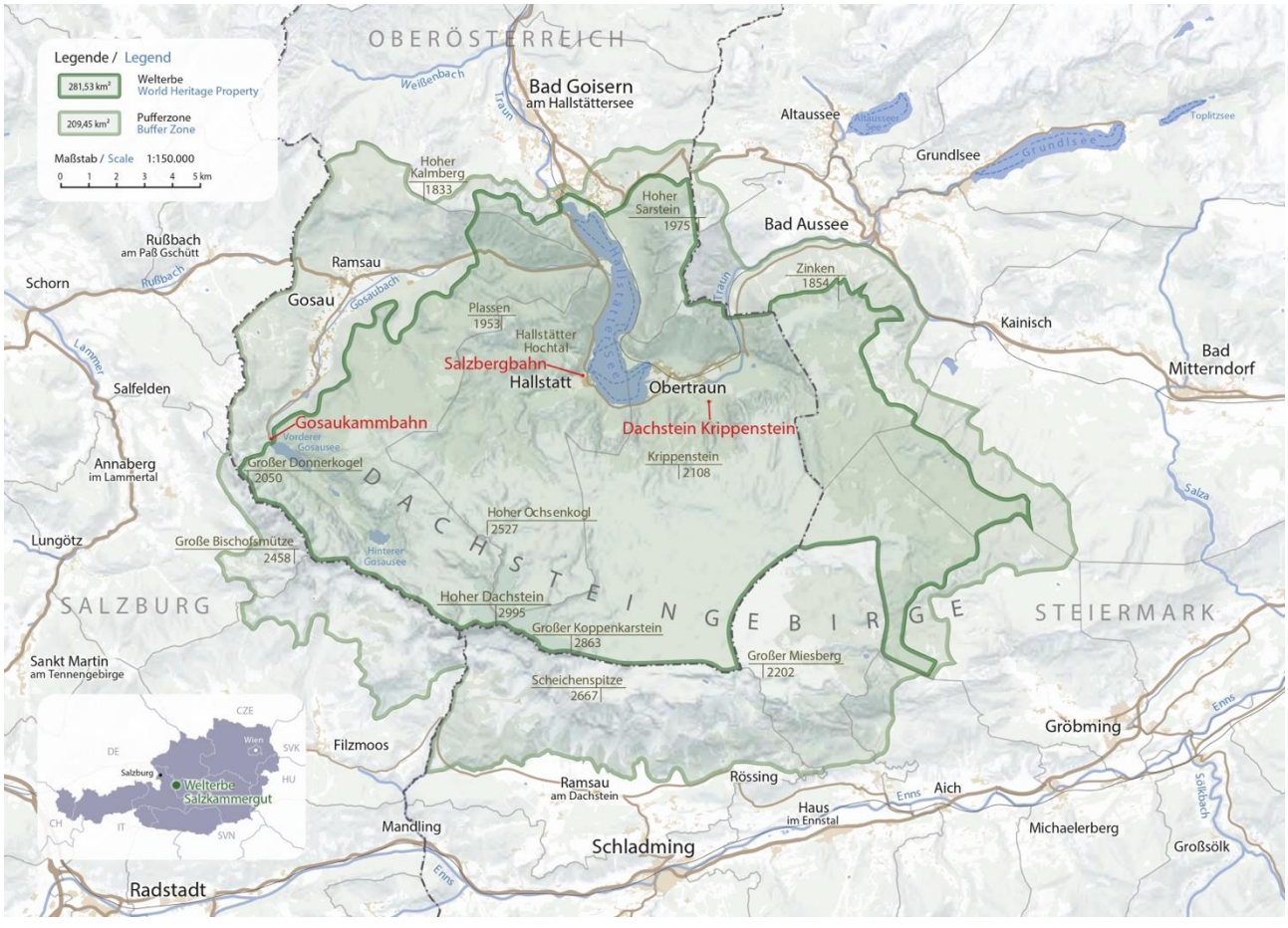

Figure 4. The Stations in Hallstatt-Dachstein/Salzkammergut
(Verein Welterbemanagement Kulturlandschaft Hallstatt-Dachstein/Salzkammergut)

5. Case Study: The Salzbergbahn Hallstatt

5.1 Description and Geographical Context

The Salzbergbahn Hallstatt is a funicular railway connecting the historic village of Hallstatt with the Salzberg high valley above, where the world's oldest known salt mine has been in operation for over 7000 years. The valley station sits within the built fabric of a settlement of fewer than 800 permanent residents, located south-west of the historic village centre in the Hallstatt-Lahn district. Every architectural decision concerning the station is therefore simultaneously a decision about the scale and character of the village itself.

5.2 Historical Development

When the salt mine opened to tourists in 1926, access was on foot only, via a steep path. (NHM Wien, 2024). No station building existed. The landscape itself was the only threshold between village and mine.

A gondola lift installed in 1955 marked the first mechanical intervention on the slope (NHM Wien, 2024), coinciding with the postwar expansion of alpine tourism: rising disposable incomes and car ownership brought mountain destinations within reach of a broad public for the first time (Denning, 2014). The gondola station was minimal and discreet, absorbed by the dense forest cover above the village. Commercial use was negligible.

The gondola was replaced in 1980 by a funicular built by Waagner Biro, seventeen years before UNESCO inscription of the site. By 2024 the system carried over 250,000 passengers annually (DEEF, 2025).

5.3 Architectural Analysis

A historic photograph indicates that the gondola station consisted primarily of an exposed timber structure supporting the cable car machinery and boarding area (see Figure 5). Rather than a fully enclosed station building, the installation appears to have been conceived as a lightweight technical framework sheltered by a pitched roof. The structural system remained largely visible, emphasising its infrastructural function. Positioned within dense forest cover, the station maintained a relatively modest visual presence and appears to have had little architectural expression beyond the requirements of the cable car system itself.

Figure 5. Historical Valley Station (gondola), The Salzbergbahn Hallstatt (Archive of the Hallstatt Museum, reproduced with permission)

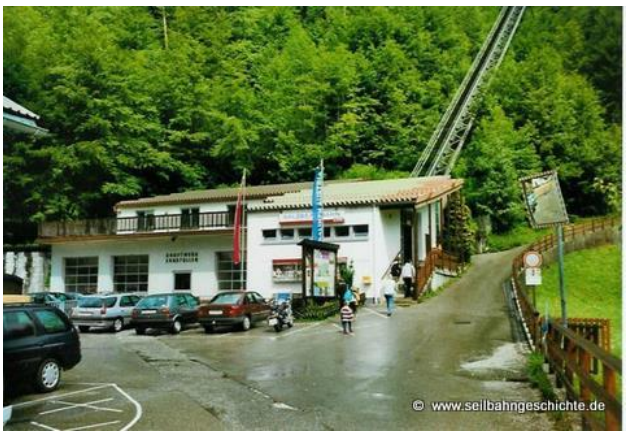

Figure 6. Valley Station of the Salzbergbahn Hallstatt before renovation (Sagen.at Forum, accessed May 2026)

The valley station was modest and functional: white plastered exterior, mono-pitched roof, small footprint, recessed against the treeline (see Figure 6). Its scale and position gave it contextual neutrality within the village ensemble. The building did not assert itself architecturally, and the density of the surrounding forest further limited its visual presence within the historic fabric.

The new valley station extends into what was previously the separated waiting house, reaching approximately 1,500 m² and incorporating a 280 m² retail flagship store alongside transport operations (SI Magazin, 2025). The retail programme is integrated directly into the station sequence rather than remaining a separate ancillary function. As a result, commercial activities become part of the visitor experience itself. Similar to contemporary airport terminals, passenger circulation is organised in a way that places retail and merchandise spaces along the primary route through the station. The station buildings are formally neutral: flat roofs, large glazed elevations. Timber cladding appears to be applied to the exterior, at least in the project renderings (Hasenauer.Architekten, n.d.), though the final material execution cannot be confirmed from available sources. A salt crystal geometry is applied to the cabins as a regional identity motif (SI Magazin, 2025), but the stations themselves carry no equivalent formal gesture. The new building is significantly larger and taller than its neighbours, with a formal language foreign to the historic ensemble (see Figure 7).

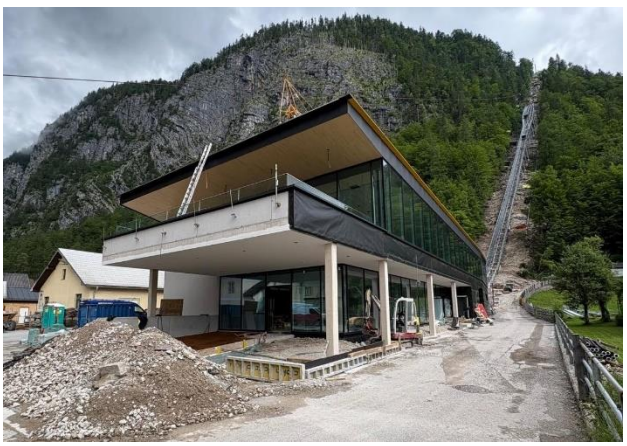

Figure 7. The new valley station of the Salzbergbahn Hallstatt nearing completion, June 2026 (Salzwelten.at, accessed June 2026)

5.4 Transformation Over Time and Current Condition

5.4.1 Capacity and Use: The system has shifted from a purely functional transport infrastructure serving the salt mine's tourist programme to a commercial destination in its own right. Capacity increases from 24 to 60 passengers per trip (SI Magazin, 2025). The addition of retail and hospitality at both stations marks a fundamental change in the building's programme relative to all previous generations.

5.4.2 Heritage and Archaeological Dimension: Prior to construction, mandatory rescue excavations uncovered a Roman-period lakeside settlement directly beneath the valley station footprint, including the "Medusa of Hallstatt," a Roman onyx cameo dated to approximately 100–200 AD, described as one of the most significant Roman finds in Upper Austria (Arkeonews, 2025). The excavation was triggered solely by the UNESCO-protected status of the site. The construction permanently built over this zone.

6. Case Study: Gosaukammbahn

6.1 History and Geographical Context

The Gosaukammbahn is an aerial cable car located at the southern end of the Gosau Valley on the shores of the Vorderer Gosausee. From its valley station, the system provides access to the Zwieselalm plateau in the Gosaukamm range of the Dachstein Mountains. Operated by Dachstein AG, the cable car currently runs only during the summer season. Constructed in 1968, the system overcomes an elevation difference of 547 metres over a route length of 1,105 metres. The mountain station is situated at an altitude of 1,479 metres above sea level and serves as one of the principal access points to the alpine landscape of the Gosaukamm. It provides direct access to numerous hiking trails, climbing routes and via ferratas, particularly those leading towards the Großer Donnerkogel. The station is located in immediate proximity to the Gablonzer Hütte, reinforcing its role as a gateway between transport infrastructure and the surrounding mountain environment. (Austria Forum, n.d.)

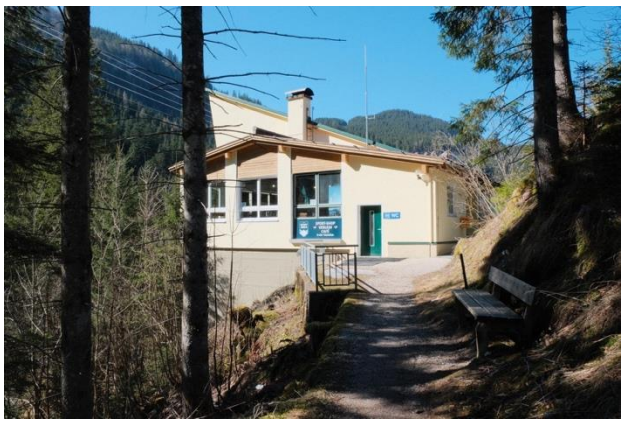

Figure 8. The Valley Station, Gosaukammbahn, April 2026 (Florian Ocenasek)

6.2 Architectural Analysis

6.2.1 The Valley Station (Talstation)

The valley station is a modest utilitarian structure positioned at the edge of the forest directly above the western shore of the Vorderer Gosausee. Partially embedded into the steep terrain, the building follows the topography rather than attempting to dominate it. Its architectural expression is restrained, consisting of simple plastered volumes, a pitched roof and limited detailing. The station presents itself primarily as infrastructure rather than as a destination in its own right (see Figure 8).

The building is characterised by a compact footprint and low overall height. Cream-coloured rendered façades are combined with timber elements beneath the roof overhangs, referencing common material traditions of the region without adopting a distinctly vernacular architectural language. Openings are regular and functional, providing daylight to interior spaces while avoiding large panoramic glazing or expressive formal gestures.

The roof form constitutes the most visually prominent architectural element. Its inclined geometry responds directly to the technical requirements of the cable car system while simultaneously reducing the apparent scale of the building within the surrounding forested landscape. Viewed from the access road, the station remains visually subordinate to both the mountain backdrop and the dense tree cover that frames it.
Recent additions including retail, café and rental facilities have introduced a more tourism-oriented programme. Nevertheless, these interventions remain secondary to the building's original infrastructural character. The station continues to reflect an architectural approach shaped primarily by operational requirements, topography and landscape integration rather than architectural representation.

6.2.2 The Mountain Station (Bergstation)

The mountain station occupies an exposed position on the Zwieselalm plateau and forms the upper terminus of the cable car system. In contrast to the valley station, which is largely screened by forest vegetation, the mountain station remains visible within the open alpine landscape and can be perceived from various points across the plateau.

The building consists of several interconnected volumes of differing heights and roof forms. Rendered façades in a light colour are combined with pitched roofs and limited timber detailing (see Figure 9). The overall composition appears utilitarian, with little emphasis on architectural representation or formal expression.

The station is characterised by the large inclined enclosure surrounding the cable car arrival area. This element visually distinguishes the building from the adjacent service structures and dominates several views of the station. The geometry of this enclosure appears closely related to the technical requirements of the cable car system, although detailed design documentation was not available for this study.

Openings are arranged in a regular manner and are generally modest in size. The building does not employ extensive glazing or viewing platforms and remains comparatively restrained in its relationship to the surrounding landscape. From a distance, the station is perceived primarily as part of the cable car infrastructure rather than as an independent architectural object.

The overall architectural character is defined by its infrastructural function. The building provides the necessary facilities for passenger transfer and technical operations while maintaining a relatively unobtrusive presence within the wider mountain environment.

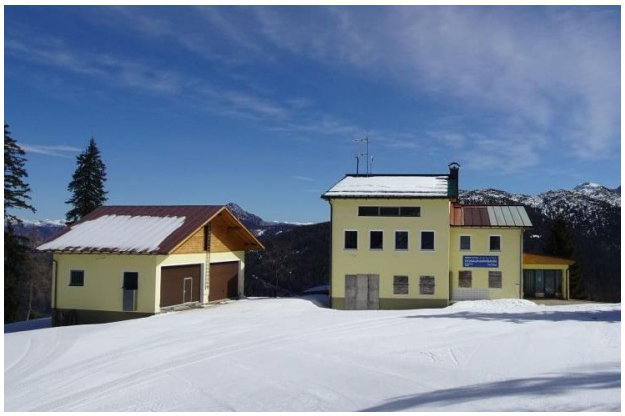

Figure 9. The Mountain Station, Gosaukammbahn, March 2025 (Alpinfans.com, accessed May 2026)

7. Contemporary Transformations in Alpine Infrastructure

7.1 Learning from Dachstein Krippenstein

The Dachstein Krippenstein Seilbahn stands as a highly successful paradigm of mid-century infrastructure conservation, demonstrating that high-capacity modern transit upgrades do not inherently require the erasure of structural heritage. While contemporary cable car developments in the alpine region frequently favour complete demolition in pursuit of corporate-identity architecture characterised by expansive curtain walls and fluid geometries, the interventions at Obertraun and the Krippenstein ridge exhibit a commendable strategy of architectural containment. The decision to retain the 1951 structural envelopes, preserving both the regional Heimatstil reception facade at the valley floor and the unornamented, monolithic concrete massing at the summit, safeguards a distinct chapter of postwar Austrian engineering history.

Crucially, the inevitable capacity expansions and technological retrofits executed over the decades have been integrated internally or restricted to the open asphalt aprons, rather than altering the historic profile or expanding the physical footprint into previously untouched alpine topography. The valley station's duality, reconciling regional masonry traditions with the raw, functionalist requirements of the cableway engineering, remains fully legible. This preservation of material and formal authenticity offers significant cultural and historical value, serving as clear physical evidence of the mid-century modern tourism boom in Upper Austria. Consequently, the complex proves that regional character and historic infrastructure can be successfully maintained while fully satisfying modern operational, safety, and high-throughput visitor demands.

7.2 Replacement as a strategy: Hallstatt Salzbergbahn

The capacity increase is operationally justified given documented demand pressure, and the footprint extension into existing asphalt rather than green space is a reasonable site decision. However, the claim by the architects that the timber building connects harmoniously with the remaining architecture of Hallstatt (Hasenauer.Architekten, n.d.) is not substantiated by any identifiable formal or material relationship to the adjacent historic buildings, with the partial exception of timber, although the majority of Hallstatt's historic buildings are constructed in stone. The doubling of capacity combined with significant new retail infrastructure accelerates the overtourism dynamic Hallstatt already faces. The project combined a transport upgrade with a commercial expansion, and the architecture is a direct result of trying to achieve both at once. A more considered approach would have separated the commercial programme from the transport infrastructure and engaged more directly with the scale and material logic of the surrounding buildings.

8. Discussion

The case studies examined in this paper confirm a central finding: cable car and funicular stations in the Salzkammergut are not neutral infrastructure. They function as threshold buildings, architectural events that mediate between valley settlement and alpine landscape, and as such carry a representational responsibility that purely technical renovation logic consistently fails to address. The comparison between the Dachstein Krippenstein Seilbahn and the new Salzbergbahn Hallstatt makes the stakes of this gap tangible. At Krippenstein, decades of technical upgrading were absorbed without altering the historic structural envelope, demonstrating that operational modernisation and heritage continuity are not mutually exclusive objectives. The Salzbergbahn replacement, by contrast, prioritised capacity expansion and commercial programming over contextual integration, producing a building whose scale, formal language, and retail programme sit in evident tension with both the historic village fabric and the UNESCO obligations of the site.

What the Hallstatt case also reveals is the difference between symbolic reference and genuine architectural engagement. The salt-crystal cabin motif applied to the new Salzbergbahn cabins illustrates one failure mode: regional culture reduced to decorative symbol, applied to the object without shaping the spatial or material logic of the station itself. The formally neutral replacement building, with its flat roofs, generic glazing, and applied timber, does not constitute regional identity so much as its simulation. A quite different approach is visible at the Predigtstuhlbahn in Bad Reichenhall, where a committed formal language, rooted in the Neue Sachlichkeit, has made the station a recognised regional landmark precisely because its architectural clarity is consistent and deliberate rather than borrowed. This suggests that distinctiveness and heritage sensitivity are not opposites: a station can assert a strong architectural identity while still being genuinely embedded in its landscape, provided that identity grows from material, spatial, and contextual engagement rather than from symbolic decoration.

For the Gosau region and the broader Hallstatt-Dachstein/Salzkammergut cultural landscape, these findings point towards a more considered and ultimately more optimistic trajectory than the recent Hallstatt replacement might suggest. The Krippenstein example demonstrates that the region already holds a successful model of heritage-conscious infrastructure management, one in which historic fabric and modern operational demands have coexisted productively for decades. Future interventions in the Gosau valley and across the UNESCO site should be evaluated not only against capacity and accessibility criteria, but against a wider set of considerations: architectural continuity, material appropriateness, contextual

scale, and the station's contribution to the visual and experiential integrity of a landscape whose value rests on exactly that accumulated depth. The Roman-era finds uncovered beneath the Salzbergbahn valley station during mandatory rescue excavations, including the Medusa cameo, one of the most significant Roman finds in Upper Austria, are a reminder that this depth is literal as well as cultural. The potential for future projects to engage seriously with that context, drawing on local building traditions in material and spatial terms rather than in decorative ones, represents a genuine opportunity. Done well, a new station in this landscape could be both a landmark and a responsible act of stewardship.

9. Conclusion

Our research supports the notion that alpine infrastructure has heritage value, culturally and in the context of the landscape in which it sits. Value that goes beyond just the practical infrastructural value these stations provide, being rooted in their history and the development of conquering and exploring the Alps, they themselves have become an integral part of that very region. These are not merely buildings that move people from one altitude to another. They are connecting structures, architectural moments that mark the passage between the settled valley and the alpine world above, and in doing so they have absorbed the memory of every generation that passed through them.

This understanding runs counter to how such stations are typically treated in renovation and replacement processes. The dominant justifications for intervention, capacity, accessibility, safety, economic efficiency, are all legitimate in themselves. But taken alone, they produce a logic in which the existing building is always a problem to be solved rather than a value to be preserved. What our case studies suggest is that this framing is incomplete, and that the consequences of applying it uncritically are not abstract. They are visible in the built fabric of the landscape itself.

Our two principal cases mark the poles of this choice. The Krippenstein Dachstein gondola shows that modernisation and heritage need not be at odds: decades of technical upgrading were absorbed without altering the historic structural envelope, and the result is a station that feels genuinely of its place, because it is. The new Salzbergbahn Hallstatt is the counterexample, a replacement that responds to capacity and commercial demands, but weakens contextual and architectural continuity.

The Gosaukammbahn now faces a similar crossroads. Its stations are modest, utilitarian, and deeply embedded in the forested landscape of the Gosau valley. They do not announce themselves. They do not perform. And precisely because of this, they carry a quality of contextual presence that is genuinely difficult to replicate once lost. Before any intervention is decided upon, we would suggest that those responsible ask themselves a few honest questions: Is this station embedded in its region in a way that carries meaning beyond its function? Does the proposed intervention try to make it something it never was? And does the new building genuinely respond to its surroundings, or does it merely gesture towards them?

These are not questions with fixed answers. Every site is different, every operator faces different pressures, and the tension between modernisation and heritage preservation will never be fully resolved. The discussion around heritage and modernisation in alpine infrastructure is one that should never be considered closed. But asking these questions seriously, before the first rendering is drawn, before the brief is written, before the decision to replace rather than refurbish is taken, may be the most important step towards interventions that serve both the present and the past. The Alps have been shaped by the infrastructure built to access them. It is worth deciding, carefully, what kind of shaping the next generation of interventions will leave behind.

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11. References

Arkeonews, 2025. 1900-year-old Medusa Cameo Unearthed in Hallstatt: One of the Most Significant Roman-Era Finds in Alpine Austria. 3 December 2025. https://arkeonews.net/1900-year-old-medusa-cameo-unearthed-in-hallstatt-one-of-the-most-significant-roman-era-finds-in-alpine-austria/ (accessed 17 May 2026).

Austria-Forum, 2023. Gosaukammbahn. https://austria-forum.org/af/AustriaWiki/Gosaukammbahn (accessed 20 May 2026).

Austria-Forum, 2024. Skigebiet Dachsteingletscher. https://austria-forum.org/af/AustriaWiki/Skigebiet_Dachsteingletscher (accessed 15 May 2026).

Austria-Forum, 2025. Dachsteinseilbahn. https://austria-forum.org/af/AustriaWiki/Dachsteinseilbahn (accessed 15 May 2026).

Austria-Forum, n.d. Gjaidalm. https://austria-forum.org/af/AustriaWiki/Gjaidalm (accessed 15 May 2026).

Dachstein Salzkammergut, n.d. Dachstein Salzkammergut. https://www.dachstein-salzkammergut.com/en (accessed 1 July 2026).

Dachstein Salzkammergut / Bergbahnen Dachstein Salzkammergut, n.d. Dachstein Krippenstein Cable Car. https://dachstein.salzkammergut.at/en/oesterreich-poi/detail/430004188/dachstein-krippenstein-cable-car.html (accessed 15 May 2026).

DEEF – Dokumentationszentrum Eisenbahnforschung, n.d. Die Dachstein-Krippenstein-Seilbahn – von Obertraun ins Hochgebirge des UNESCO-Naturerbes. https://www.dokumentationszentrum-eisenbahnforschung.org/dachstein-krippenstein-seilbahn (accessed 17 May 2026).

DEEF – Dokumentationszentrum Eisenbahnforschung, 2025. Salzbergbahn Hallstatt. 4 September 2025. https://www.dokumentationszentrum-eisenbahnforschung.org/salzbergbahn-hallstatt (accessed 17 May 2026).

Denning, A., 2014. From Sublime Landscapes to 'White Gold': How Skiing Transformed the Alps after 1930. Environmental History, 19(1), pp. 78–108. https://doi.org/10.1093/envhis/emt084.

Gross, F., 2011. Seilbahnlexikon: Technik, Relikte und Pioniere aus 150 Jahren Seilbahngeschichte. Berlin: epubli (Selbstverlag).

Hasenauer.Architekten ZT GmbH, n.d. Salzbergbahn / Hallstatt. https://www.hasenauer-architekten.at/seilbahnen/seilbahnen-details/salzbergbahn (accessed 17 May 2026).

ICOMOS, 1964. International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter). Adopted by ICOMOS 1965. https://www.icomos.org/images/DOCUMENTS/Charters/venice_e.pdf (accessed 10 May 2026).

Lamprecht, H., 2000. Architektur und Seilbahnen: von der Tradition zur Moderne. Innsbruck: Wirtschaftskammer Tirol

Luger, K., Rest, F., 2002. Der Alpentourismus: Entwicklungspotenziale im Spannungsfeld von Kultur, Ökonomie und Ökologie. Innsbruck: StudienVerlag.

Maria-Cristina, F., 2024. Snøhetta Wins Design Competition for Cable Car Stations in Koblenz, Germany. ArchDaily, 31 October 2024. https://www.archdaily.com/1023028/snohetta-wins-design-competition-for-cable-car-stations-in-koblenz-germany (accessed 31 May 2026).

NHM Wien – Naturhistorisches Museum Wien, 2024. 1311 until Today. https://www.nhm.at/hallstatt/en/site/1311_until_today (accessed 17 May 2026).

Predigtstuhlbahn GmbH & Co. KG, 2026. Gebaut für die Ewigkeit. https://www.predigtstuhlbahn.de/denkmalschutz/ (accessed 31 May 2026).

Riegl, A., 1903. Der moderne Denkmalkultus, sein Wesen und seine Entstehung. Wien/Leipzig: W. Braumüller.

Riegl, A., 1982. The Modern Cult of Monuments: Its Character and Its Origin. Oppositions, 25 (Fall 1982), pp. 21–51. Translated by Kurt W. Forster and Diane Ghirardo.

SI Magazin, 2025. Kabinen in Salzkristall-Form: Neue Standseilbahn für Hallstatt. 30 January 2025. https://www.simagazin.com/si-magazin/themen/seilbahn-technik/kabinen-in-salzkristall-form-neue-standseilbahn-fuer-hallstatt/ (accessed 17 May 2026).

Steurer Seilbahnen, n.d. Steurer Seilbahnen: Decades of pioneering and individuality. https://www.steurer-seilbahnen.com/en/steurer-seilbahnen-decades-pioneering-and-individuality (accessed 15 May 2026).

UNESCO, 1972. Convention Concerning the Protection of the World Cultural and Natural Heritage. Paris, 16 November 1972. https://whc.unesco.org/en/conventiontext/ (accessed 10 May 2026).

Appendix A. Survey of architecturally representative Cable Car and Funicular Stations in the Alpine Region

No.	Name	Location	Year	Intervention	Usage
1	Gosaukammbahn	Gosau	1968	-	Tourism
2	Dachstein Krippenstein	Obertraun	1951	-	Tourism
3	Dachstein Mittelstation Schönbergalm	Obertraun	1951	-	Tourism
4	Dachsteinbahn Talstation Gjaidalm	Obertraun	1951	-	Tourism
5	Dachstein-Gletscher Talstation der Bergbahn	Schladming-Dachstein	1966-1969	-	Tourism; Scientific/Meteorological
6	Talstation Rittisbergbahn	Ramsau, Styria	2022	-	Tourism
7	Salzbergbahn	Hallstatt	1980	Replaced 2026	Industry, Mining, Tourism
8	Bergstation Katrin Seilbahn	Bad Ischl	1959	Renovated 1979	Tourism
9	Bergstation Feuerkogel Seilbahn	Ebensee	1927	Modernized 1985; Gondolas 2019	Tourism
10	Zwölferhorn-Seilbahn	St. Gilgen	1957	Modernized 2020	Tourism
11	Untersbergbahn	St. Leonhard, Salzburg	1959-1961	-	Tourism
12	Loser Bergbahn Talstation	Altaussee	1973	Replaced 2024	Tourism
13	Loser Bergbahn Mittelstation	Altaussee	1973	Replaced 2024	Tourism
14	Zillertal Arena Mittelstation	Tyrol	1999	Modernized 2023	Tourism
15	Nebelhornbahn Talstation	Oberstdorf, Germany	1930	Replaced 2021	Tourism, Logistics
16	Nebelhornbahn Station Seealpe	Oberstdorf, Germany	1930	Replaced 2021	Tourism, Logistics
17	Predigtstuhlbahn	Bad Reichenhall, Germany	1928	-	Logistics, Public Transport, Tourism
18	Muottas Muragl Bahn	Samedan, Switzerland	1907	-	Public Transport, Tourism
19	Vigiljochbahn	Lana bei Meran, Italy	1912	-	Public Transport, Tourism
20	Kohlererbahn II	Bozen, Italy	1913	-	Public Transport, Tourism
21	Pfänderbahn	Bregenz	1927	-	Public Transport, Tourism
22	Old Patscherkofelbahn	Innsbruck	1928	Reuse	Youth Center/Hotel
23	New Patscherkofelbahn	Innsbruck	1928	New station	Tourism
24	Nordkettenbahn Seegrubenbahn Bergstation	Innsbruck	1928	-	Tourism
25	Nordkettenbahn Hungerburgbahn Station	Innsbruck	2007	-	Urban Transportation
26	Galzigbahn	St. Anton	1937	Replaced 2006	Tourism
27	Vallugabahn	St. Anton	1954	-	Tourism
28	Muttersbergbahn	Bludenz	1956	-	Tourism
29	Hirschberglift	Bizau	1970	-	Tourism
30	Doppelsesselbahn Schideck	Sportgastein	1972	-	Tourism
31	Weibermahdbahn	Lech	1985	-	Tourism
32	Seilbahn Hochbrixen	Brixen im Thale	1986	-	Tourism
33	Zinsberglift	Brixen im Thale	1987	-	Tourism
34	Rüfikopfbahn II	Lech	1987	-	Tourism
35	Kaiserburgbahn II	Bad Kleinkirchheim	1987	-	Tourism
36	Grießkareckbahn II	Wagrain	1988	-	Tourism

37	Festkogelbahn	Obergurgl	1989	-	Tourism
38	Gipfelbahn Kitzsteinhorn	Kaprun	1990	-	Tourism
39	Boe-Bahn	Corvara, Italy	1992	-	Tourism
40	Zugspitz-Gipfelbahn	Garmisch-Partenkirchen, Germany	1992	-	Tourism; Scientific/Meteorological
41	Steinmähderbahn	Lech	1993	-	Tourism
42	Petzenbahn	Feistritz ob Bleiburg	1993	-	Tourism
43	Rifflseebahn	St. Leonhard im Pitztal	1994	-	Tourism
44	Golmerbahn	Vandans/Golm	1995	-	Tourism
45	EUB Möseralm	Fiss	1995	-	Tourism
46	Karrenseilbahn	Dornbirn	1996	-	Tourism
47	Arena Express	Laax, Switzerland	1997	-	Tourism
48	Sonnenkopfbahn	Klösterle	1997	-	Tourism
49	Steinplattenbahn	Waidring	1998	-	Tourism
50	Frau-Hitt-Lift	Innsbruck	1998	-	Tourism
51	Pitz-Express	Mandarfen	1983	Modernized 2022	Logistics, Tourism
52	Areitbahn	Zell am See	1988	-	Unknown
53	Pardatschgratbahn	Ischgl	1990	Modernized 2015	Tourism
54	Hornbahn	Kitzbühel	1991	Modernized 2022	Tourism
55	Brunnalmbahn	St. Jakob im Defreggen	1992	-	Tourism
56	Gamsgartenbahn	Neustift	1992	-	Tourism
57	Lazidbahn	Serfaus	1992	-	Tourism
58	Zwölferkogelbahn	Saalbach-Hinterglemm	1993	-	Tourism
59	Kreuzjochbahn	Fulpmes	1995	-	Tourism
60	Penkenbahn	Mayrhofen	1954	Modernized 1995 & 2015	Tourism
61	Hahnenkammbahn	Kitzbühel	1929	Renovation 1996	Tourism
62	Kogelalmbahn	Wagrain	1996	-	Tourism
63	G-Link	Wagrain	2013	-	Tourism
64	Silvrettabahn	Ischgl	1963	Replaced 1998	Tourism
65	Zürserseebahn	Zürs	1998	-	Tourism
66	Falginjochbahn	Kaunertal	2019	-	Tourism
67	Füssener Jöchle-Bahn	Grän	1998	-	Tourism
68	Bergstation Seilbahn Meran 2000	South Tyrol, Italy	1965	Renewed 1998 & 2010	Tourism
69	Goldriedbahn	Matrei in Osttirol	1998	-	Tourism

Table 1. Inventory of Stations Surveyed for this Study