**The Inlaid‑Linoleum Process and its Relation to Schatzalp**

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**1 Inlaid‑Linoleum at Schatzalp**

**1.1 Introduction**

The present‑day mountain hotel on Schatzalp, built from 1898 to 1900 by the Zurich architects Otto Pfleghard & Max Haefeli, was originally a Sanatorium and spa. Schatzalp belongs to the tradition of numerous sanatoria erected in the Alps at that time, as fresh mountain air and sunlight were considered curative—especially against tuberculosis. Aimed at the upper social classes, this is reflected in the building’s luxurious fit‑out and the patients’ extravagant lifestyle. After the first effective anti‑tuberculosis medicines appeared in the late 1940s, sanatoria for pulmonary patients became obsolete. The institution on Schatzalp was therefore converted into a hotel in 1953–1954. Traces of its original use, however, are deeply embedded in the building’s architecture and remain visible today.

Architecturally and from a heritage perspective the Sanatorium Schatzalp is notable for its construction: it was among the first buildings in the Canton of Graubünden to use a reinforced‑concrete structure (Système Hennebique). In terms of design, the building reveals multiple influences—Pfleghard & Haefeli’s penchant for mixing architectural elements is unmistakable. While representative rooms such as the dining room and conversation salon display prominent Jugendstil ornamentation, the exterior is restrained and strongly informed by the load‑bearing frame, with clear forms and volumes. The building thus marks—both constructively and stylistically—a transition from historicism to modernity.

Aligned with the hygienic demands of the institution, linoleum was installed in corridors and patient rooms because it was easy to clean and was soon found to have bactericidal effects. In keeping with the spirit of the time, these linoleum floors were ornamental—specifically, they imitated the refined patterns of oriental carpets both in corridors and rooms. With its distinctive materiality, the Sanatorium Schatzalp thus contributed to contemporary building practice and is still regarded as a key forerunner.

What is special about these floors is the type of linoleum: executed as Inlaid‑Linoleum, which has not been manufactured for decades, they are an important witness to this kind of floor covering—then seen as a sign of progress in terms of cleanliness and production.

**1.2 Current Condition**

Today, only a few remnants of the original linoleum are presumed to survive at Schatzalp. Through an exchange with Dr. William Lee (historian and social‑media staff at Schatzalp) we accessed archival photos. Large portions of the floors were removed or covered with carpet after the conversion to a mountain hotel in 1953. Floor finishes now vary between rooms, and it is unclear where original linoleum persists. In total, four linoleum patterns were identified as once present at Schatzalp.

**1.3 Research Questions**

Since its installation, Inlaid‑Linoleum played a significant role in the Sanatorium’s appearance. Past interventions into the linoleum stock were often not conservation‑minded and downplayed the historical value of the floors. This work analyses this special linoleum type in relation to Schatzalp and considers possible approaches to restoration or reproduction.

Key question: How should the remaining linoleum at Schatzalp be handled in the future? Which measures are appropriate from a restorative and conservation perspective? Are there contemporary techniques for reproducing Inlaid‑Linoleum that are viable economically—and should the material return to Schatzalp? Which properties ought to be retained or complemented?

**2 History of Inlaid‑Linoleum**

**2.1 General history of linoleum**

In England, alternatives to carpets were sought under the term “floorcloth” in early patent registers. The 1843 patent by Henry Purser Vaile formed a foundational basis: his rubber‑cork compound—later known as “Kamptulicon”. Perforated metal sheets were filled with plastic masses of different colours; after rolling, a flat, coloured surface resulted. In 1844 Elijah Galloway filed the patent for the official “Kamptulicon”, a new wall and floor material consisting of a mixture of gutta‑percha, rubber and cork powder. Unlike its predecessor, plates were either bonded directly to the wall/floor with putty or under‑backed with a support fabric to permit later removal. The focus lay on paintability and ornamental enrichment of interiors—alongside sound‑damping and heat‑retention as welcome side effects.

Lawrence Bunn worked to remedy deficiencies such as low strength and high temperature sensitivity, e.g., by embedding thin wire mesh or perforated metal plates, and by colouring the mass itself to combat rapid wear of surface pigments. Adoption was initially modest but, by the late 1850s, improved processes enabled profitable manufacture, prompting factories and broad application in public and semi‑public buildings. Kamptulicon was relatively expensive due to cumbersome production and costly raw materials (approx. 1:12 cork‑to‑rubber), prompting a search for substitutes for rubber.

In 1860 Frederick Walton’s patent displaced Kamptulicon with “Linoleum” (from Linum + Oleum). Rubber was replaced by an “india‑rubber substitute” of linseed oil and resins with similar properties. Contrary to popular belief, linoleum consists largely of plant‑based raw materials. Walton’s key discovery: linseed oil oxidises in air into a viscous transparent mass; oxidation is accelerated by heat and oxygen donors. Walton exposed varnish to warm air and maximised surface area to speed drying. In 1863 he patented bonding cork meal with oxidised oil and gum/resins and applying the mix to fabric, as well as surface ornamentation by printing, embossing and painting. He founded Linoleum Manufacturing Co. Ltd. in Staines (near London) and later expanded to Paris, Delmenhorst and New York; by 1888, England alone had 20+ linoleum factories.

**2.1.1 Properties**

Linoleum is a mixture of oxidised linseed oil (Linoxyn), cork meal and resins. A several‑millimetre wear layer is bonded to a varnished jute fabric (typically 41–46 yarns, 10–20 twists per metre). Cork particles are fully encapsulated by Linoxyn, making the material water‑tight and pore‑free—allowing wet cleaning. Low thermal conductivity yields a comfortable surface temperature. Linoleum also exhibits antibacterial and germicidal properties owing to linseed‑oil components released over its service life.

Its elasticity provides sound absorption, often enhanced with additional cork or more viscous Linoxyn (so‑called ‘cork linoleum’), and sometimes with sub‑layers such as cork, peat, pumice boards or sand. At Schatzalp, felt mats were laid beneath for sound absorption. Linoleum came plain or patterned, frequently in earth tones. Plain material was coloured throughout to remain uniform after wear, though it was more prone to visible streaks and thus less suited to heavy‑traffic areas than patterned variants. Patterning was achieved by placing differently coloured granular masses onto the fabric, by printing oil‑based inks onto plain linoleum, or by assembling differently coloured cut pieces—yielding Granite‑, Inlaid‑ (Mosaic‑) or printed linoleum. Standard roll widths were 1.83 m, 2.00 m or 3.66 m at 25 m lengths; thicknesses ranged roughly 1.6–3.75 mm.