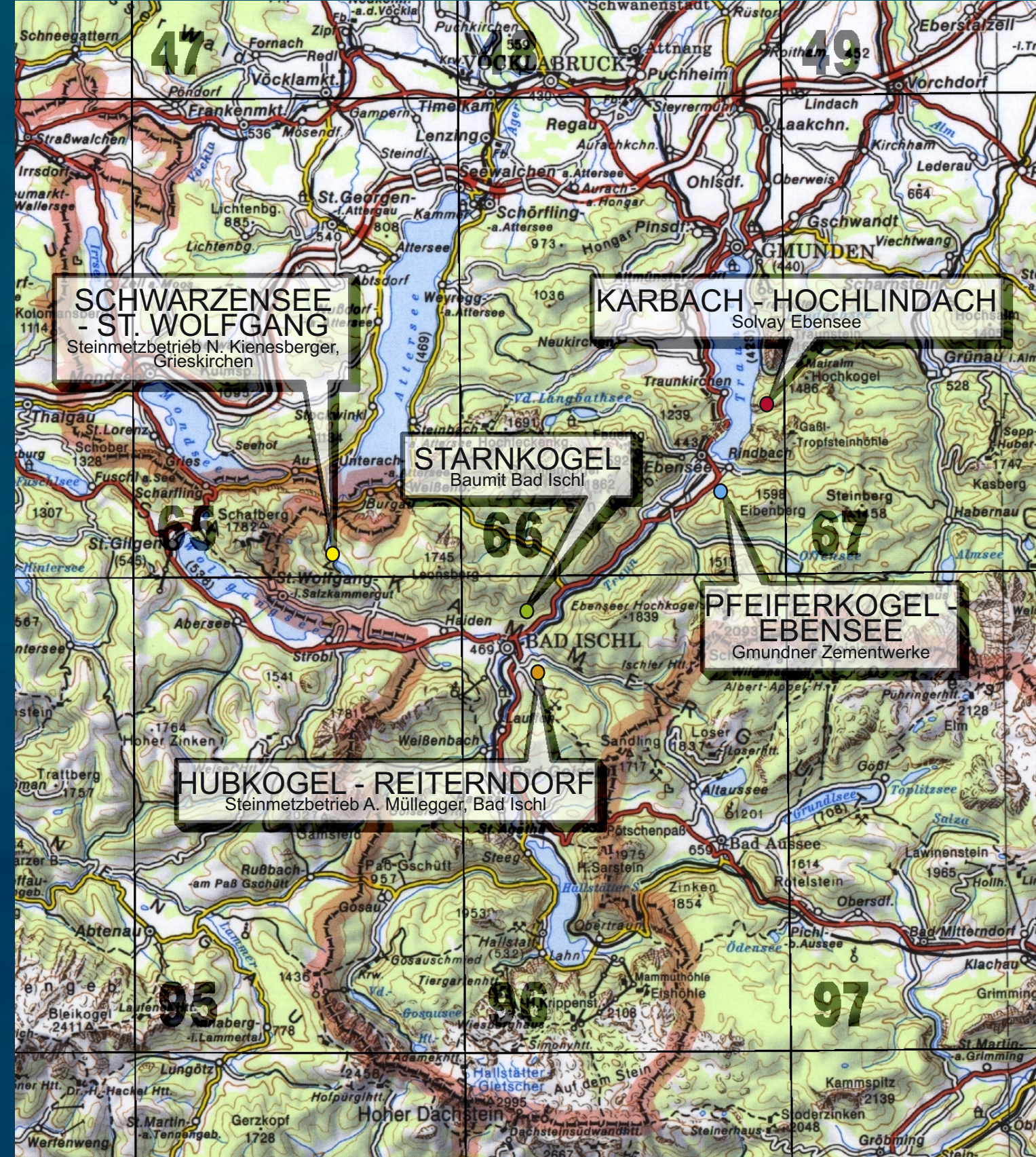


USAGES OF LIMESTONE DEPOSITS

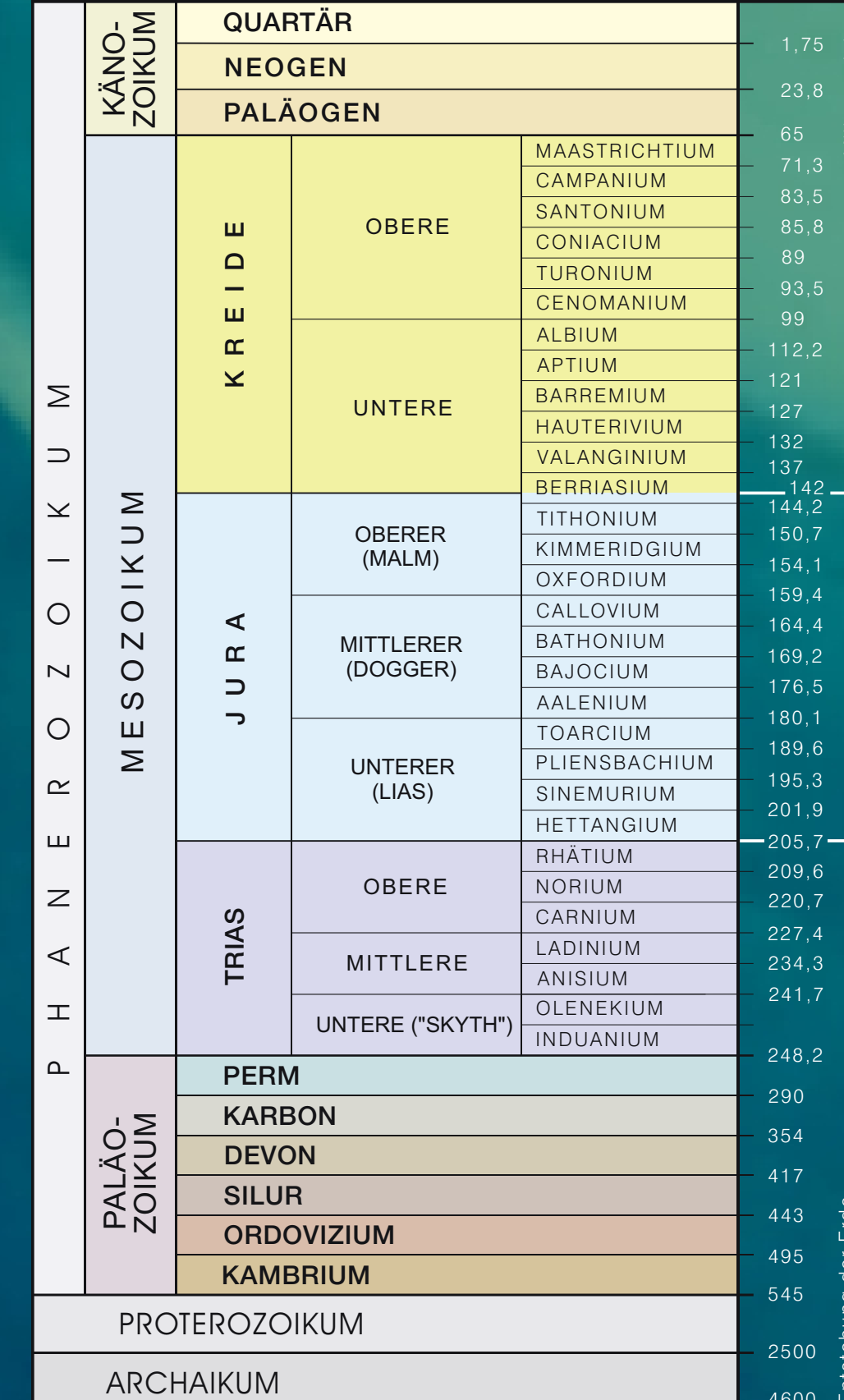
GEOLOGY

SALZKAMMERGUT REGION / AUSTRIA

Location of the quarries



Geological timetable



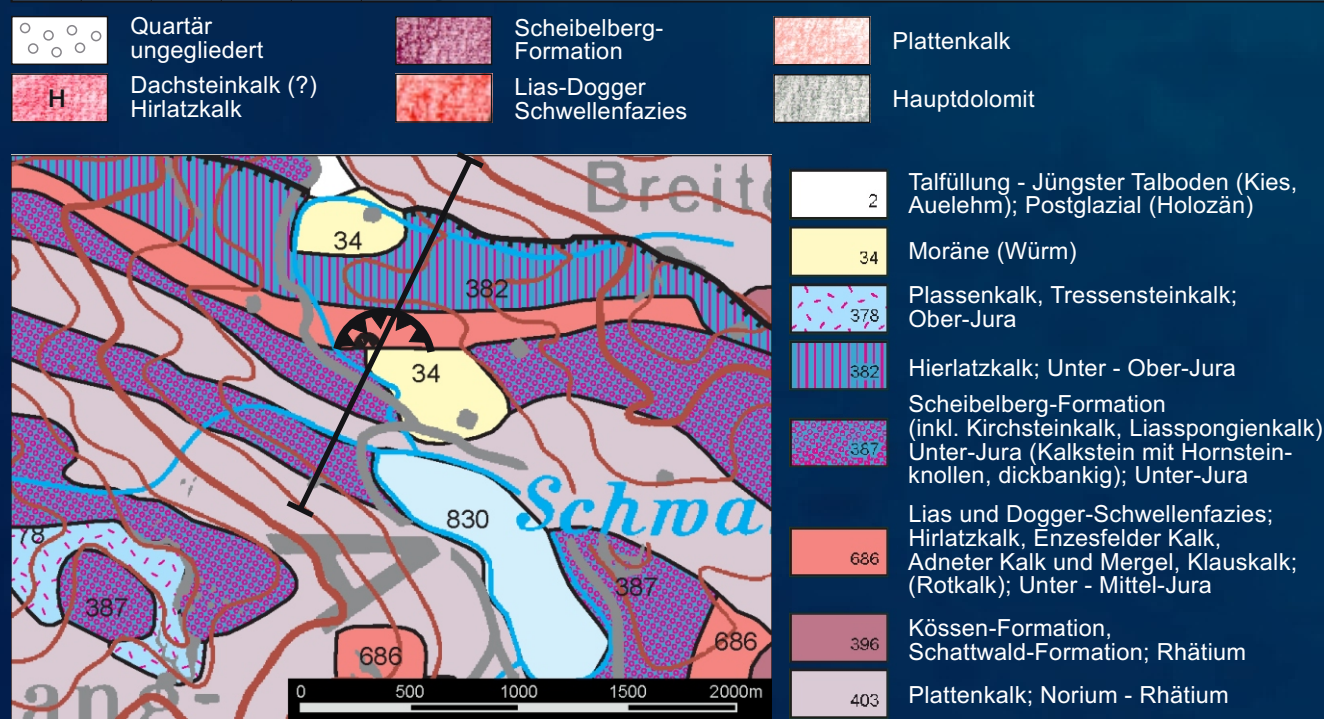
Poster exhibition

On the occasion of the conference "Earth - Man - Culture - Environment".

Contributions to the geology of the Salzammergut region
28. - 31. August 2003
Museum in Gmunden
Upper Austria.

The five quarries under the focus of attention are described in detail in the paper "The Usage of Upper Triassic and Jurassic Limestone in the Salzammergut region" in the conference proceedings.

Profile according to the geological map Bl. 65 Mondsee VAN HUSEN (1989), PERESSON (1991, Prof. C), SPENGLER (1991, Prof. X) and TOLLMANN (1976, Prof. 12).

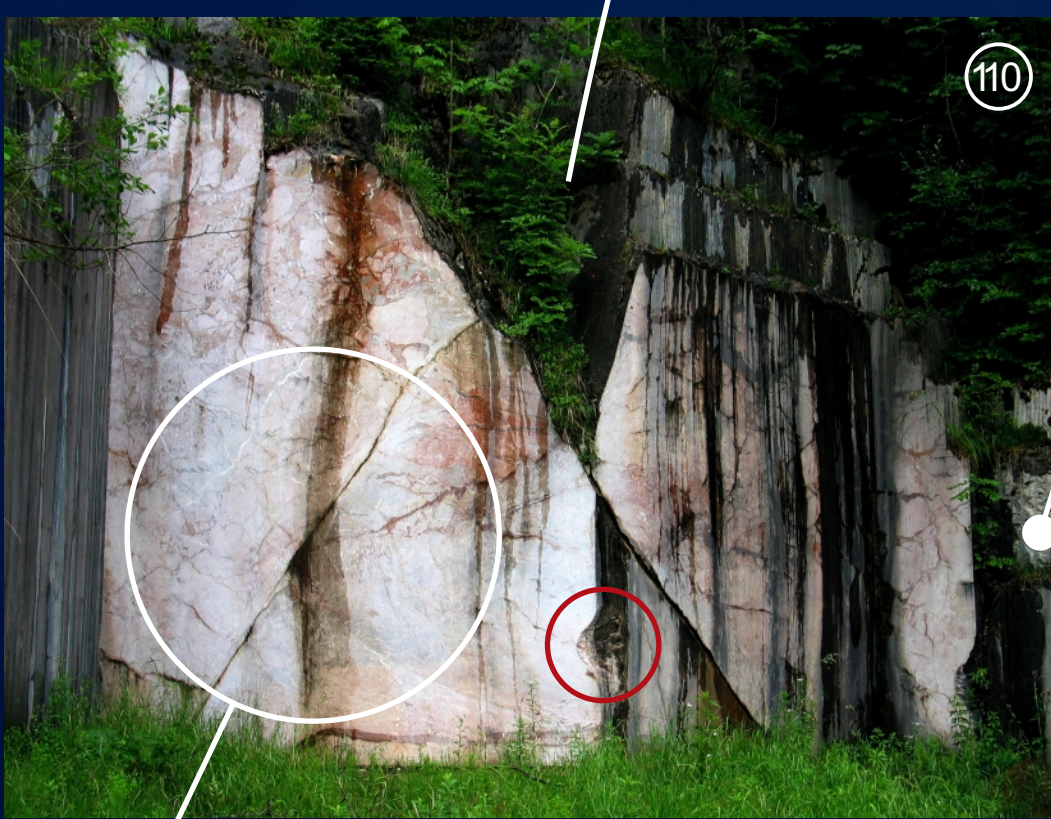


Stonemason Company N. Kienesberger

SCHWARZENSEE



The quarry is about 35 m long and has a ca. 12 m high wall sawed in steps. It is situated east of the Moosbach waterfall ("Straubing") at the base of a wooded low mountain range 500 m NW of the shore of Schwarzensee. It is invisible from the western forest road to Atersee.



The northern wall in the eastern part of the quarry is projecting like an oriel. The very young fissures limit the size of the worked blocks to 3 to 4 cubic metres. A saw with a diamond rope is used, which is threaded through bore holes, which are drilled perpendicular to each other. The worked block is sawed by creating the first side wall, followed by creating the floor and finally the second side wall, till it breaks off (red circle - break-off point).

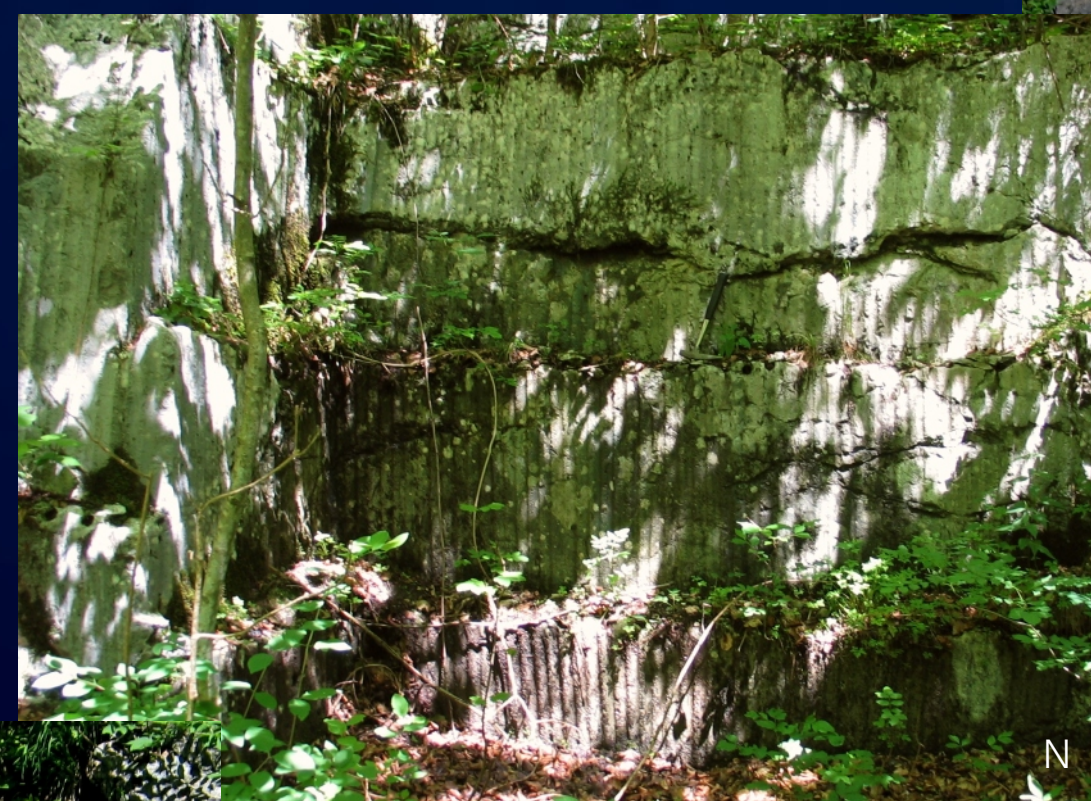


Western wall in the eastern part of the quarry. It shows the highly brecciated part of the Bunte Lias-Kalk, which, according to its slope parallel dip, crops out close to the surface. At the bottom dominating grey components pass into red micrite components which merge into allodapic limestones. The sedimentary rock shows several phases of brecciation and tectonics. The vugs and fissures are filled with dark clayey marls, which by themselves show reworking through folding and faulting. Tape measure one metre.

In the eastern wall the main rock is a light to slightly pink crinoid limestone (Hiratzkalk). The photo shows a detail where the limestone - mainly Hiratzkalk, subordinate red and greenish micrite - disintegrates into a breccia with vugs filled with polyphase cements (bordering beige fibrous micement and white blocky cement inside). The sharp edges of the components imply hardly any transport.



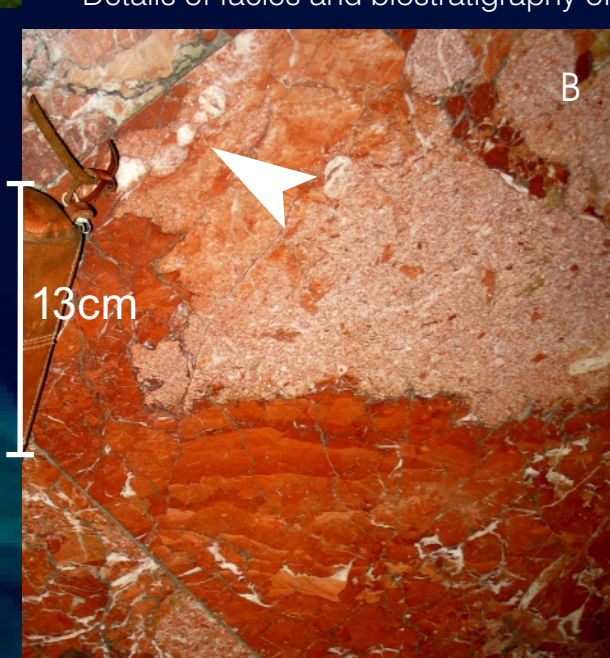
Due to the low contrast on the dry wall only the scarcity of the clayey seams is remarkable.



Two small cauldron shaped quarries, each ca. 5 m long and up to 5 m high, are situated on the planation above the active quarry. This northern one shows the hole by hole drilling type of the 20th century. The one adjacent to the south with kerfs presumably originates from the Barock times, when edgings and cornices among others had been produced for the monasteries in Mondsee and St. Florian and the church in St. Wolfgang.



Outcrop of breccia and grey, more thinly bedded limestone of slight thickness at the road on the planation above the active quarry.



A gradation is inferred in the red micrite from the transition of dark to light colour and some calcific caps interpreted as geopot structures. Shell of a cephalopod (white arrow) is dissolved and replaced by blocky clastic. The light pink crinoidal sparite contains also redeposited clasts of red micrite and marl.

Historical Quarries



Distribution of the components of light pink Hiratzkalk.

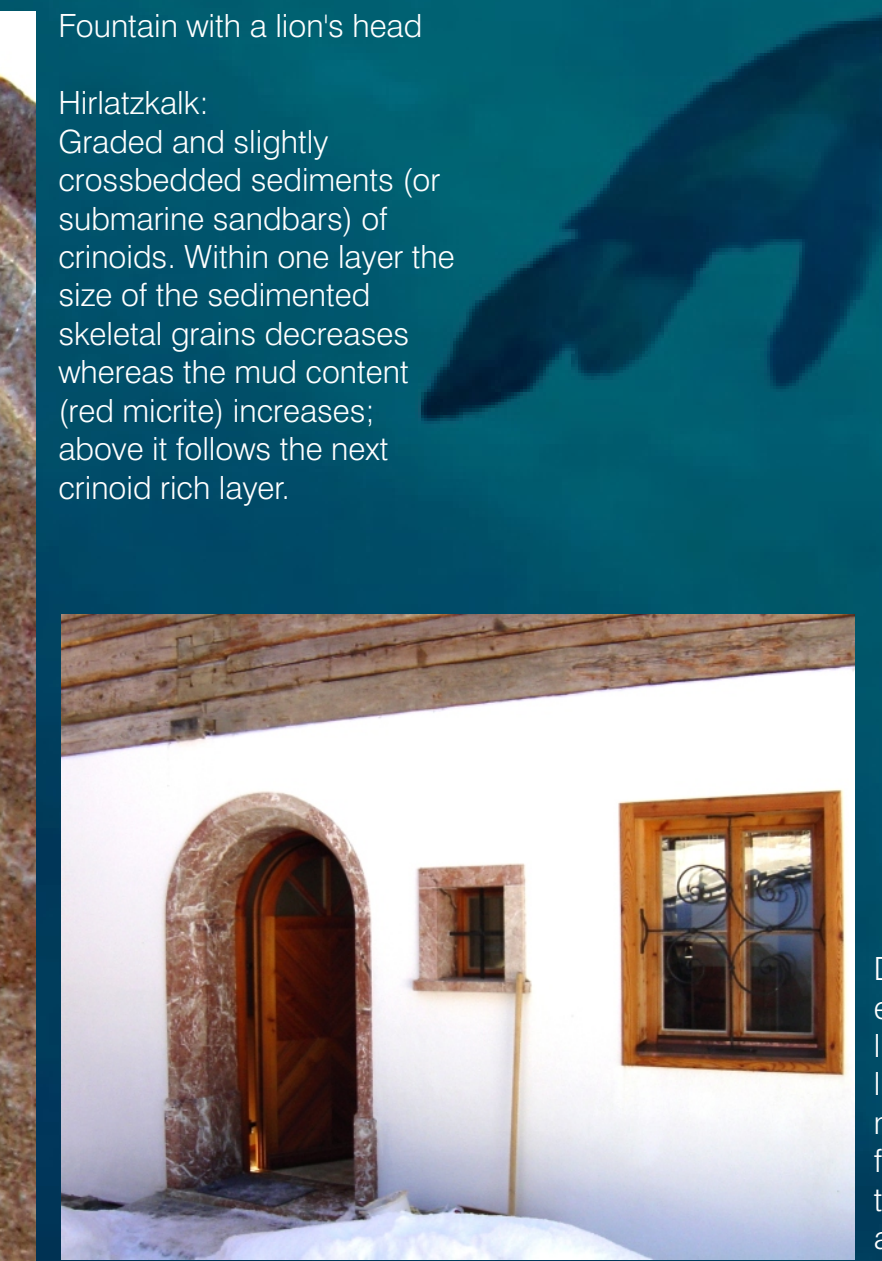


The marly sediment, which had been deposited in the voids between the Lias-Kalk components of the breccia was itself formed into components afterwards.



Burgtheater in Vienna: foyer on the ground level, parapet and floor (restoration after 1945). Floor slabs B 50 x 50 cm, colour not always authentic due to floor treatment and green-grey putty.

It is an example for its manufacture dating back to the mining by Benno Steller / Linz ca. 1840-1860. He established the nowadays reactivated quarry. Signs of the old working methods, like the hole by hole drillings are still visible in the higher eastern wall parts (110).



Fountain with a lion's head

Hiratzkalk: Graded and slightly crossbedded sediments (or submarine sandbars) of crinoids. Within one layer the size of the sedimented skeletal grains decreases whereas the mud content (red micrite) increases; above it follows the next crinoid rich layer.

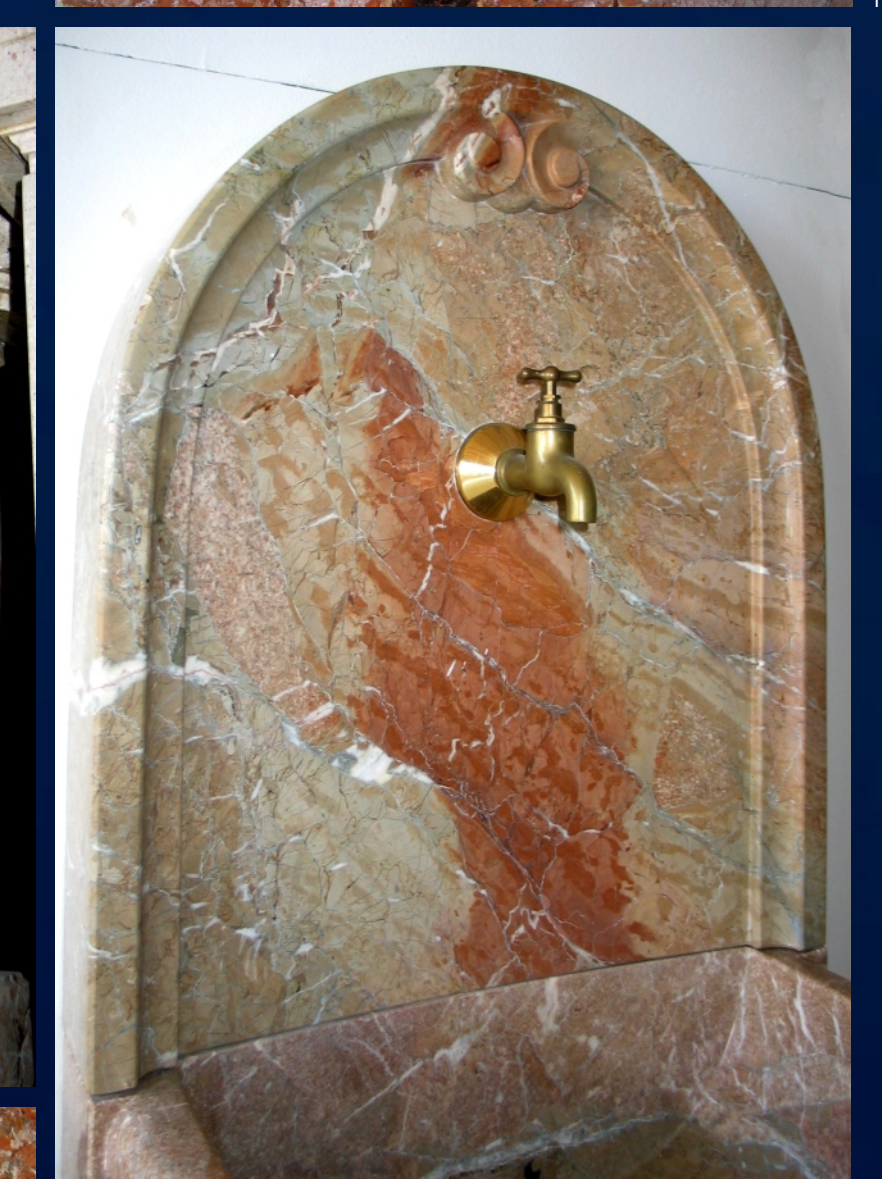


Floor slabs (ca. 45 x 45 cm) in the catholic church in Gosau.

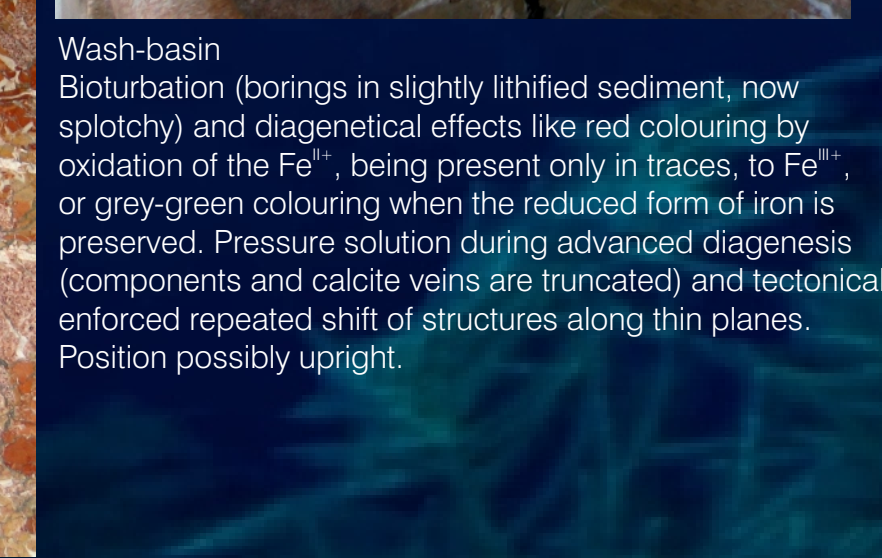


Model slab, brushed, 120 x 70 cm. Brecciated Hiratzkalk lies in a groundmass of laminated marly limestone to claystone which is red to green or partly black stained through manganese.

Commodities



Wash-basin. Bioturbation (borings in slightly lithified sediment, now spotty) and diagenetical effects like red colouring by oxidation of the Fe²⁺, being present only in traces, to Fe³⁺ or grey-green colouring when the reduced form of iron is preserved. Pressure solution during advanced diagenesis (components and calcite veins are truncated) and tectonically enforced repeated shift of structures along thin planes. Position possibly upright.



Several stages of brecciation. Size of the components between 2 and 20 cm.