Olavinlinna

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SEIR-materialeanalyse A/S

Olavinlinna

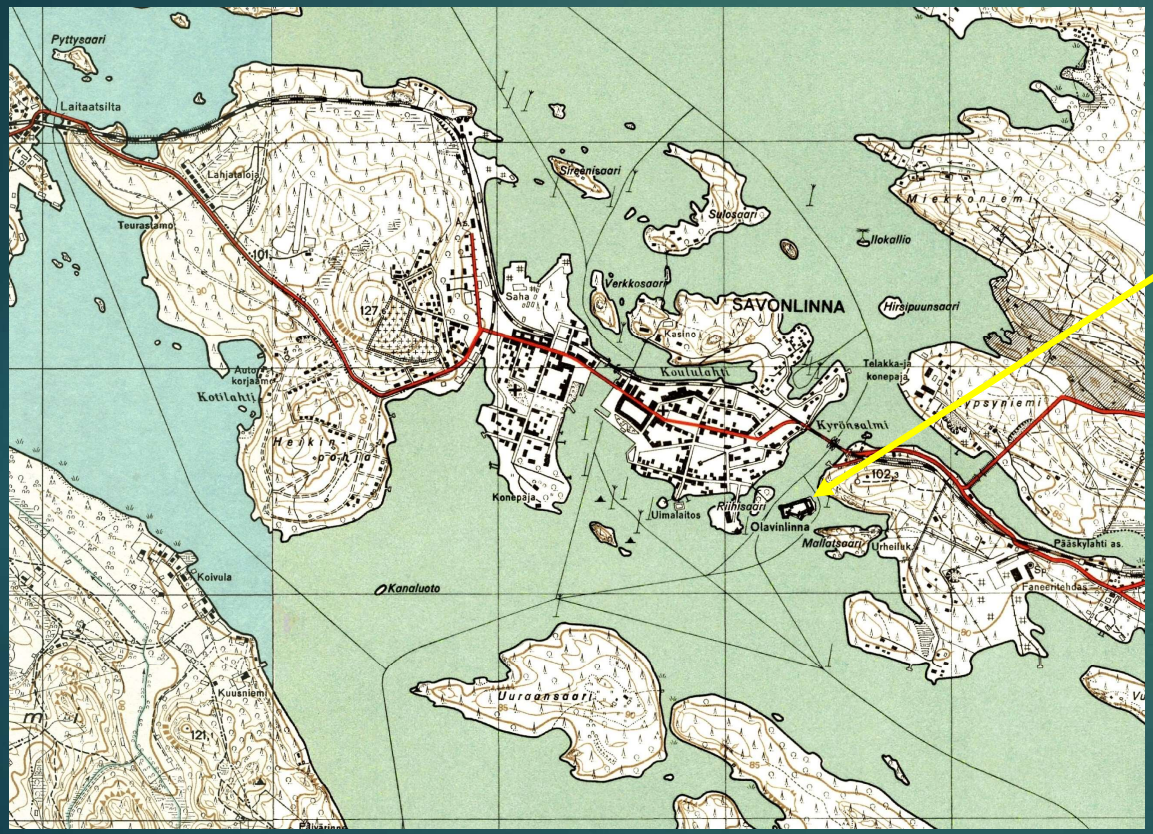
Border fortification from 1475 to 1809

Defensive fortress

Controlling waterways

Savonlinna with Olavinlinna

Savonlinna with Olavinlinna



Olavinlinna

Narrow strait:

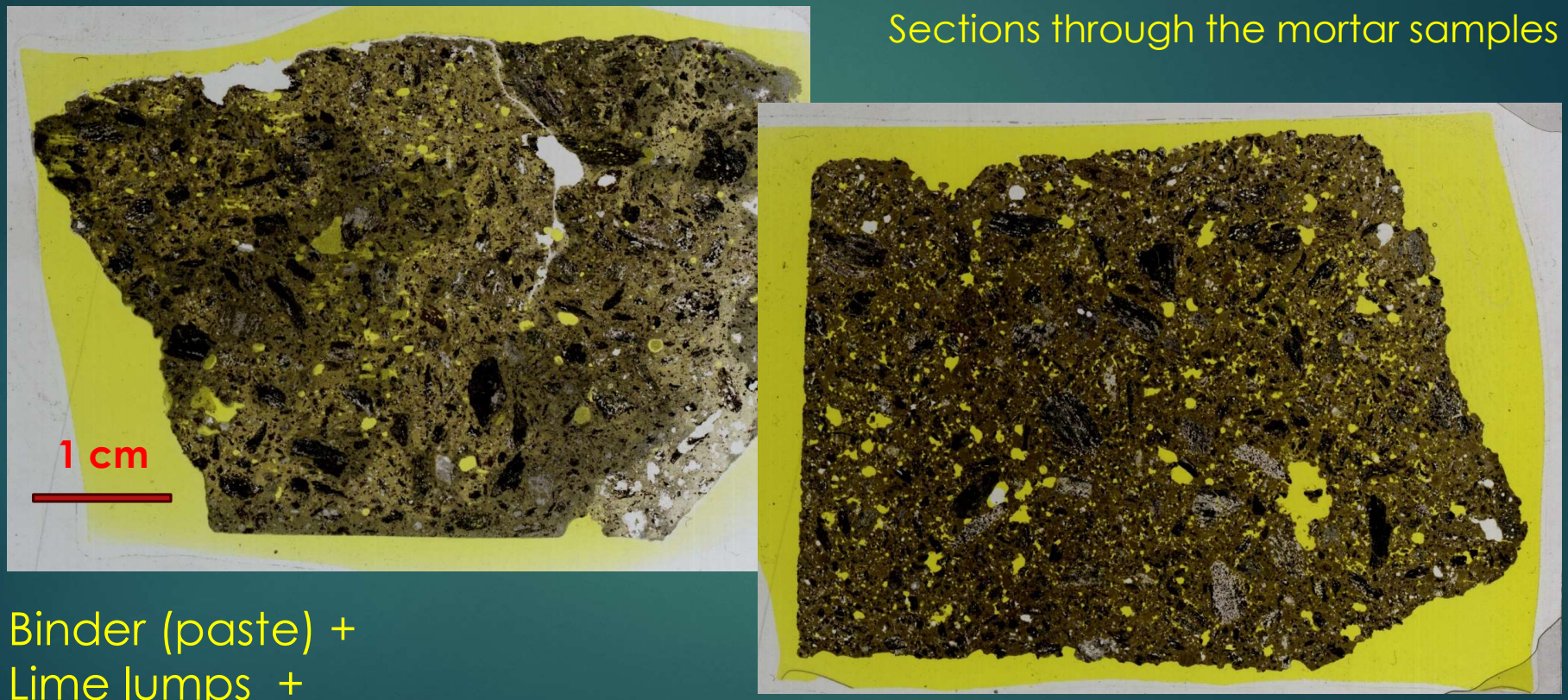
Vigorous stream

Non-freezing

1:20.000 Savonlinna-Sääminkii 1947

Olavinlinna

Sections through the mortar samples

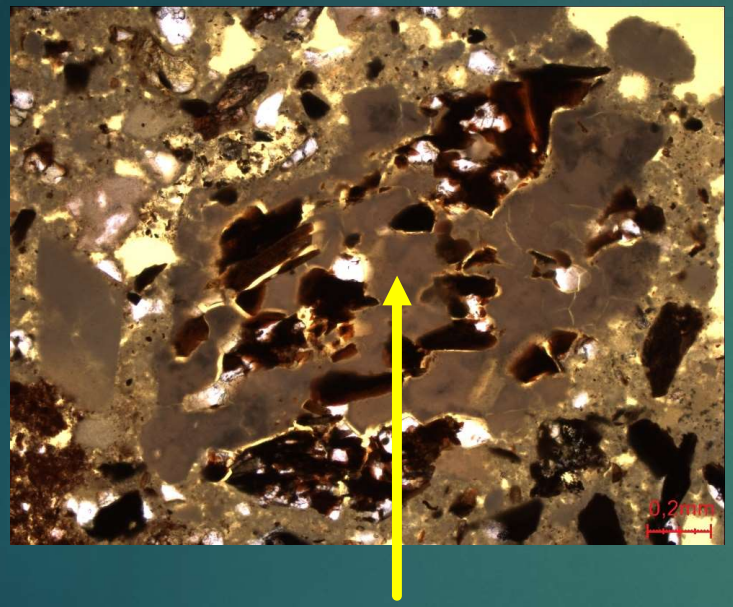


Binder (paste) +
Lime lumps +
Crystalline rocks: Pyroxene skarn, cordierite gneiss, hornblende schist

Olavinlinna

- Aggregate particles burned with the limestone
- Ancient building materials often local and characteristic
- Origin can be found
- Cultural information
- Restoration with original/equivalent materials

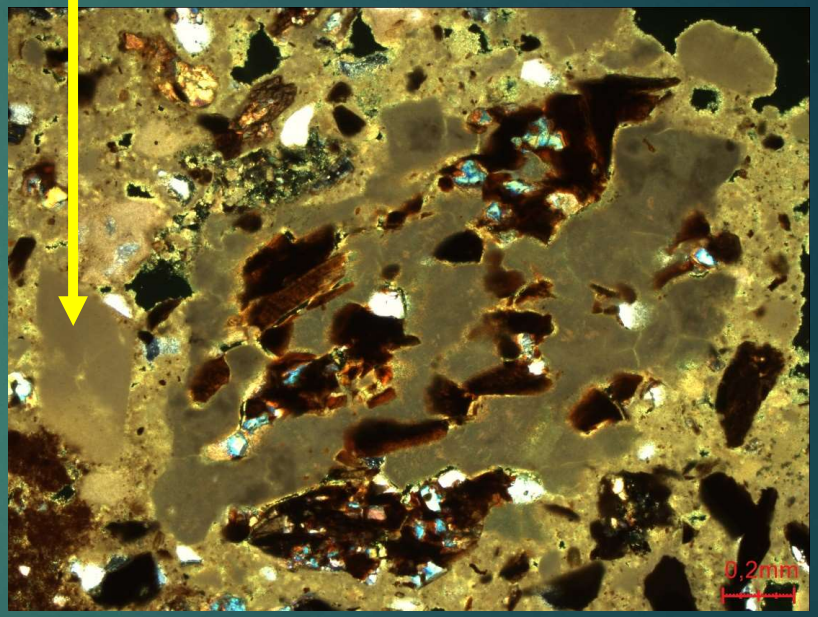
Olavinlinna



Lime lump with silicate fragments

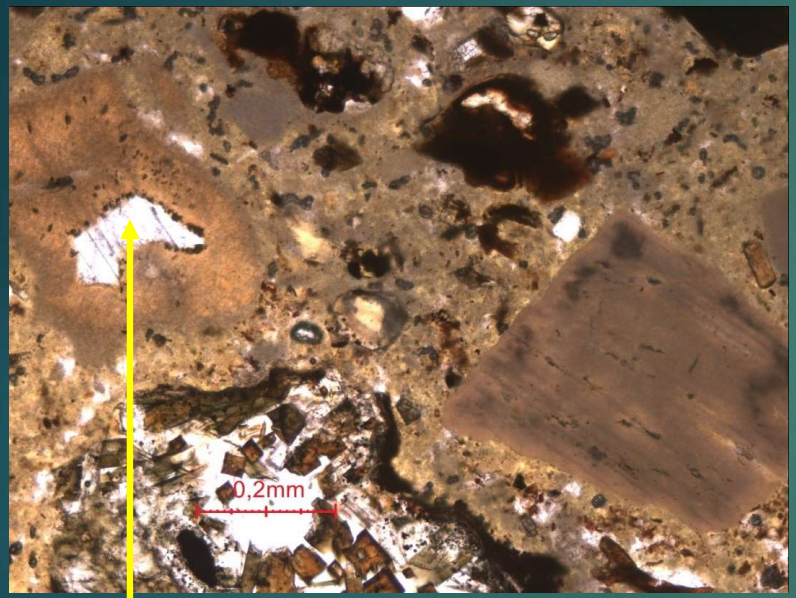
0.2 mm

Calcite, burned and slaked



In conclusion, the limestone was
a coarsely crystalline limestone which included aggregate particles

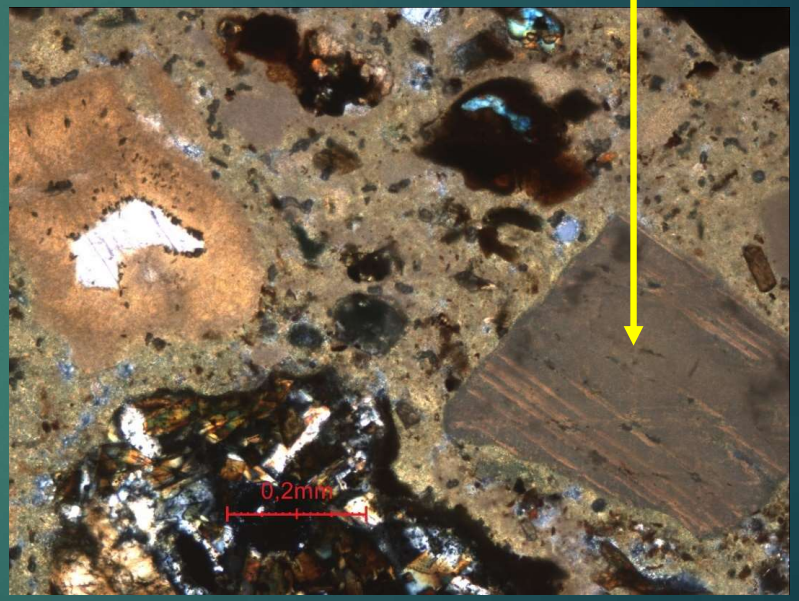
Olavinlinna



Non burned core

0.2 mm

Calcite with twinning



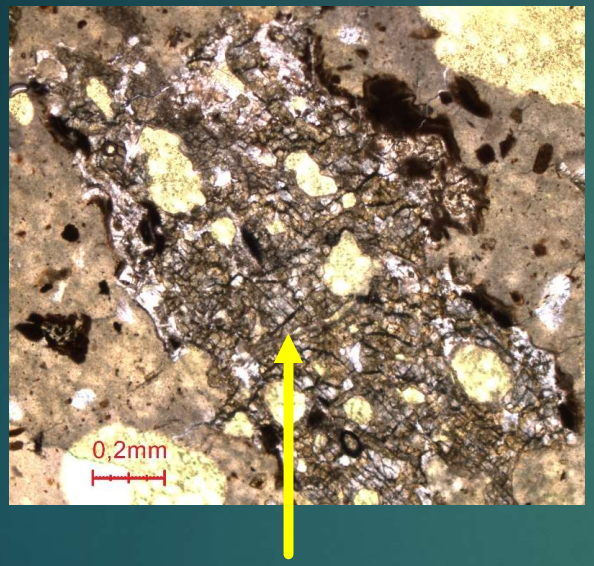
In conclusion,
the limestone was a crystalline marble like rock

Olavinlinna

Calcite cleavage rhombs

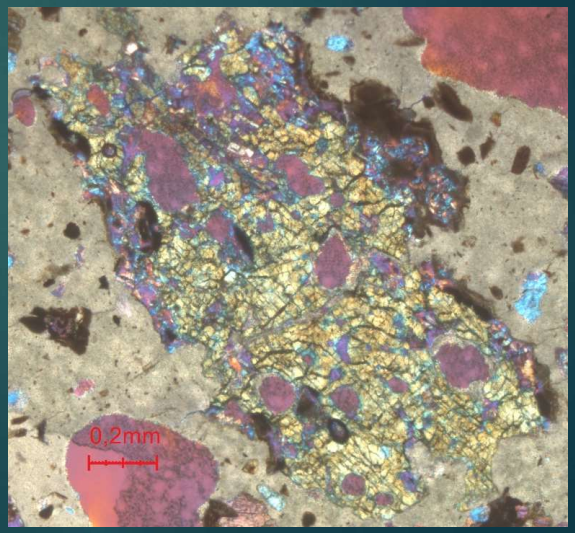
from Pargas/Nordkalk

Olavinlinna



This pyroxene was burned as a part of the limestone in the kiln

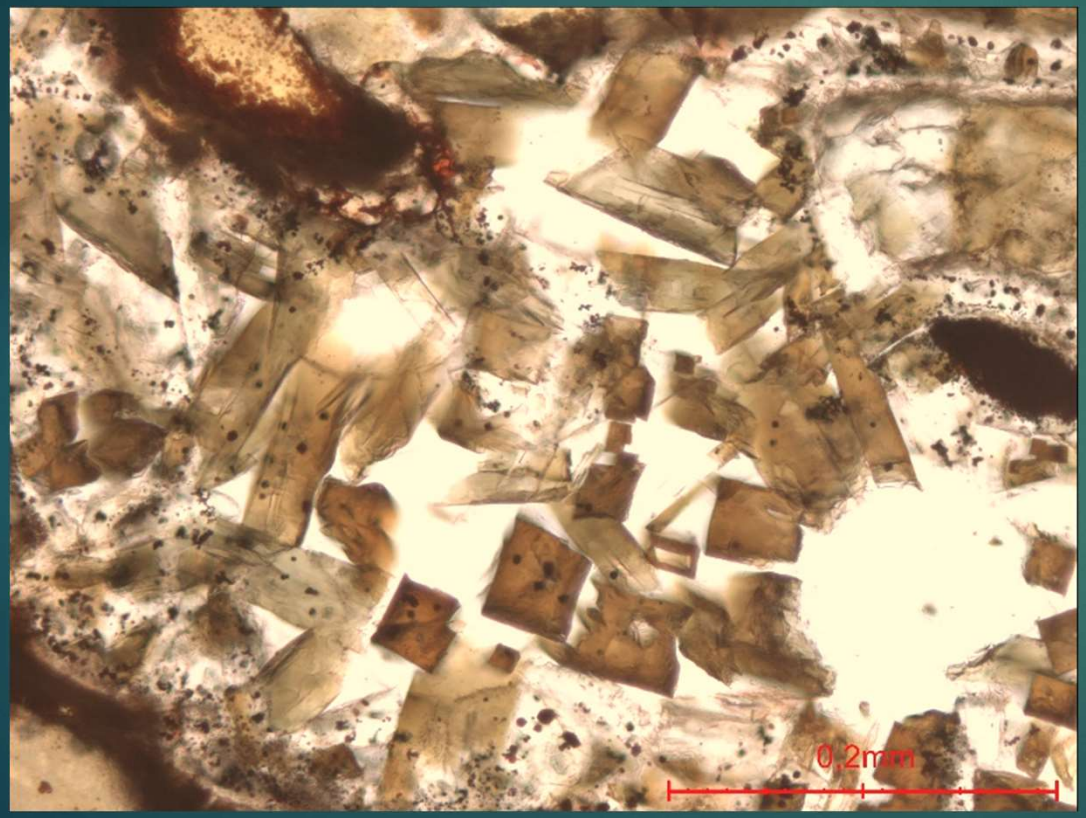
The holes in the pyroxene indicate temperatures 800-1000°C



It was burned as part of the binding media

It acted as an aggregate particle giving strength and workability/cohesion to the mortar

Olavinlinna



Pyroxene crystals

Beautifully crystallized

Widely separated

Savonlinna

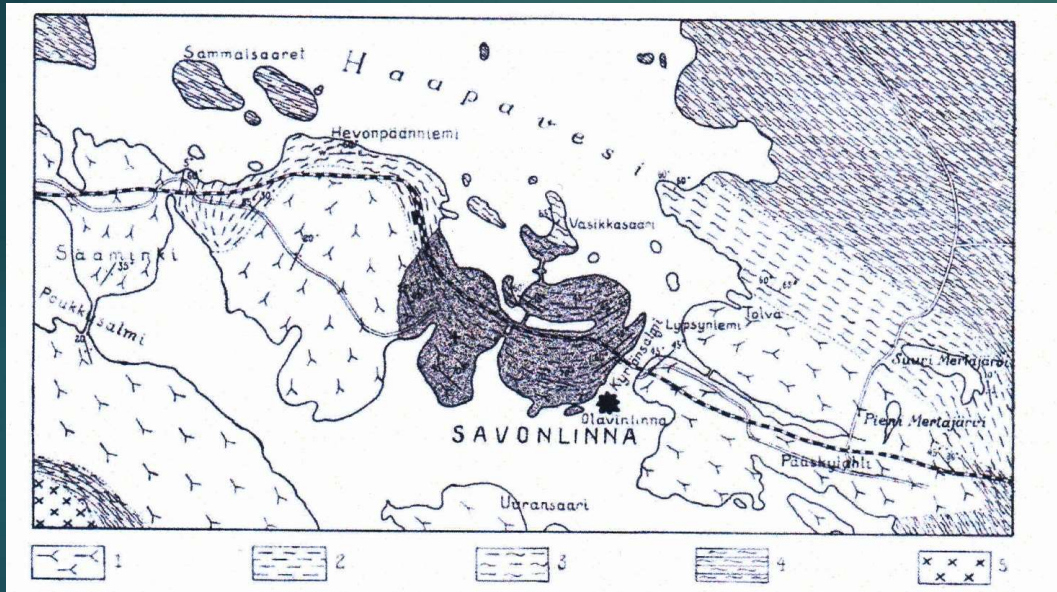


Fig. 3. Karta över staden Nyslotts (Savonlinna) omgivningar. Skala ca. 1 : 70 000.

1. Kordieritgneis. 2. Hornblendeskiffer. 3. Migmatitiserad hornblendeskiffer. 4. Ådergneisartad glimmerskiffer. 5. Centralgranit. Den mörka schatteringen utmärker stadens område.

Geological literature:

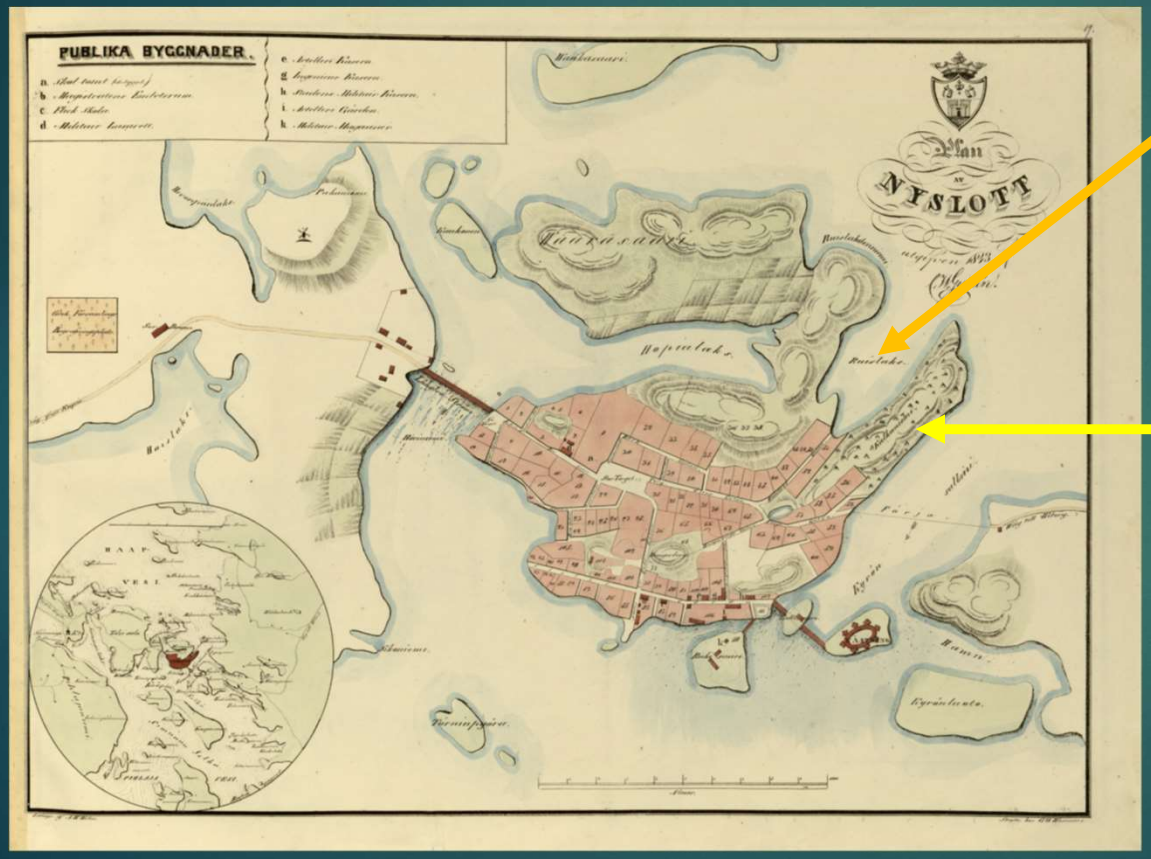
Cordierite gneiss

Hornblende schist

Pyroxene skarn

Hackman (1931:15)

Savonlinna



Ruislahti bay area with an old limestone quarry

Kalkunieini / Kalkkuinniemi

Olavinlinna

Analysis: Marble with specific rock fragments

Same rocks as the bedrock

Literature: The marbles are said to contain these specific rocks

Conclusion: The marble has the same components as the mortar

Old marble quarry close to the castle

It was funny indeed exciting However, we can't get any closer

Thank you for your attention

Olavinlinna

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