

A6784

Brick, Terra Cotta & Stone

Spring 2018

Tuesdays 1:00-4:00 pm
Norman Weiss & Dan Allen

655 Schermerhorn Extension

Summary

This course explores a complex group of traditional masonry materials--brick, terra cotta and stone. The format includes lectures, demonstrations, field and laboratory exercises, and field trips. The goals of the course are to provide: 1) an historical overview of the manufacturing and sourcing of these architectural materials with a focus on the 18th century to the present; 2) an understanding of some fundamental material properties in relation to their use and deterioration in a range of masonry construction systems; and 3) an exploration of state-of-the-art means and methods of their repair, maintenance and conservation.

Schedule

Lectures

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| 16 January | Course introduction: rock-derived materials Properties and behavior of masonry (analysis and testing) |
| 23 January | Ceramic science: raw materials, firing, microstructure |
| 30 January | Historical overview: brick production and use in North America |
| 6 February | Architectural terra cotta use: mid-19 th century to WWII |
| 13 February | Industrial manufacturing of architectural terra cotta |
| 20 February | Common building stones: mineralogy, rock terminology Quarrying, cutting, carving and surface finishing |
| 27 February | Deterioration of masonry materials and construction, part I pH; porosity/permeability + Lab exercise : water absorption test methods |
| 6 March | Deterioration..., part II + Lab exercise : salt ID by anion analysis (qualitative microchemistry) |

SPRING BREAK

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| 20 March | Conservation and replacement strategies, part I (brick and stone) Pointing, pinning and grouting |
| 27 March | Conservation and replacement strategies, part II (terra cotta) + Class project time |
| 3 April | Thin stone cladding: technology, performance and repair |
| 10 April | Chemical consolidation and surface-applied treatments Sealers, water-repellents and graffiti coatings |
| 17 April | Cleaning of brick, terra cotta & stone Water spray, steam, chemical, micro-abrasion and laser techniques |
| 24 April | Class project time |

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Friday field trips

23 February Allan Gilbert, Fordham University brick collections, Bronx, NY
(March/April) Darrell Petit, Stony Creek quarry, Branford, CT
(March/April) Kate Ottavino, A. Ottavino Corporation, Ozone Park, NY

Grading

Attendance and Class Participation 20%
Assignments/Project 80%

Readings

Posted to *Canvas* weekly

06 January 2018