ARCH 4/507 Fall 2020
EXPERIMENTAL BUILDING MATERIALS:
lateral thinking for low cost, eco-friendly alternatives

Monday Wednesday Friday 8:00-9:00AM REMOTE, 3 or 4 credits
Satisfies ADVANCED TECHNOLOGY requirement with 4 credits.

Instructor: Architect Nina Maritz, Nina Maritz Architects, Namibia
Pre-requisite: two or more design studios (ARCH, IARC, LA, PD)

“When I examine myself and my methods of thought, I come
to the conclusion that the gift of fantasy has meant more
to me than my talent for absorbing positive knowledge.”
— Albert Einstein

Conventional systems can reduce the architect’s role into selecting materials from a catalogue and trotting out standard details, the only physical contact being with small samples, no manipulation or experiment possible. This can turn construction technology into a mundane and tedious chore.

But materials and their assembly make a building come alive. As Carlo Scarpa so rightly put it, “God is in the detail”. In this course, students will indulge in the magic of making – the pleasure of discovering potential materials, the enjoyment of envisaging possibilities, the delight of hands-on experimenting and the satisfaction of applying their full range of skills to creating something different.

What this seminar will not do, is to incorporate the demands of legislation and regulation into the study of technology. We will not be concerned with compliance with any particular authority, but from the start, consciousness of the environmental impact of construction materials and waste.
The seminar will start with an introduction to alternative resources, mostly from the Habitat Research and Development Centre, a cluster of building and landscape interventions experimenting with a wide range of locally sourced materials and techniques. There will also be a quick “resource audit” of the space and equipment available to students for working with various materials, and to come up with solutions for any deficiency.

Students will then delve into the rich resource of published materials to expand their views of what can be used as building materials. Together, they will compile a pool of in-depth sources, to refer to during the course and in the future, with peer discussions to concisely convey information to each other and cover as much ground as possible.

After this, students will go out on scouting missions to discover potential materials, with no pre-conceived ideas, only that the three areas of earth-based, life-based and man-made waste will be covered.

After submission of the discovered materials, discussion and further literature research will narrow down the selection for tests and experiments. Students will now get physical – testing and manually handling the materials to expose their potential and limits. Some tests will follow tried-and-tested methods, others will be conceived by students themselves. This will further narrow down the range into a few materials for “making”.

The “making” part is somewhat open-ended, as depending on the previous results, students will now as groups or individually make something - an item, object or structure – with one or more of the discovered materials.

Graduate students will be additionally required to lead a class discussion and create a written summary of the topic.

FOR THE ADVANCED TECHNOLOGY CREDIT: Those interested in fulfilling the Advanced Technology requirement will need to do some testing of the chosen material’s properties – whether it be thermal qualities, water resistance, compressive strength, or whatever is appropriate in terms of the type of material selected. The purpose is to familiarize the student with the more technical aspects of materials technology, as well as build up a picture of the qualities of the material, for record purposes and reference by others. Students should arrange access to some form of materials testing facility, at research labs within their own department or other departments, institutions or businesses in the area.

Students need to bring an open and enquiring mind, willingness for pro-active and self-study, readiness for active discovery missions and getting their hands dirty, and an ability (however latent) to engage in vigorous discussion.

Student evaluation will be based on ongoing participation and submissions, with a final publishable report from each student on the course process and results. Some use will be made of peer evaluation for comparative and educational purposes.