SHORT COURSE: FOUNDATION DESIGN for HOUSING

DEPARTMENT OF CIVIL ENGINEERING • 2 days • 13 & 14 October 2025

PRESENTED BY:

Prof Peter Day
Extraordinary Professor of Geotechnical Engineering & Consultant, Jones & Wagener

Prof Charles MacRobert
Associate Professor in Geotechnical Engineering, Stellenbosch University

FEES

2 day course: R 7 000.00 pp
3 or more candidates: R 5000.00 pp

ECSA CPD POINTS

2 points

LANGUAGE

The course will be presented in English.

Further course details on Page 2.

CONTACT

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OBJECTIVES

This course has been tailored for persons involved in the approval or inspection of foundations for houses. Its primary audience is home builders and their appointed competent persons, certification bodies, and technical personnel from the NHBRC and Local Authorities.

The objective of this course is to provide a practical understanding of:

- Site investigation requirements and methods for township establishment & individual homes.
- The selection and design of appropriate foundations for houses,
- Design of retaining walls and semi-basements including damp-proofing and subsoil drainage.
- Construction control requirements.
- Recognition of problems soils, precautionary measures and methods of remediation.
- Roles of players in the home building industry.
- Applicable standards and legislation.

OUTCOMES

At the end of the course, the participants should be able to:

- Assess the adequacy of site investigations for types of development and soil conditions
- Assess the suitability of proposed foundation types and designs
- Know what to look out for during inspection of work on site and tests to be undertaken
- Recognise problems soil conditions and appropriate precautions / remediation
- Identify and conform to applicable standards and statutory requirements.

COURSE ARRANGEMENTS

This course will be presented **Online via MS Teams.**
Details will be forwarded to registered delegates the week before the course and once payment has been received.

Click HERE
Online registration
Please READ the T's&C's

REGISTRATIONS

Registrations close on 30 September 2025. All payments are due by 03 October 2025.

Payment confirms registration.

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STELLENBOSCH UNIVERSITY: FOUNDATION DESIGN FOR HOUSING

This document provides details of the proposed course for the purposes of CPD accreditation by ECSA.

Dates: 13 - 14 October 2025. 08:30 – 16:00 (6 hours contact time per day plus 4hrs homework assignments)

Presentation mode: MS Teams (Link to be sent to individual delegates following receipt of payment)

Course objective: Furthering the knowledge of persons involved in investigation, design, construction and inspection of foundations for houses.

Course assessment: Course participation will be assessed via short quizzes during lectures.

Presenters:

- Prof Peter Day PrEng, Stellenbosch University and Jones and Wagener
- Prof Charles MacRobert, Stellenbosch University

Course content: The following lectures will be presented:

1. Foundation types for housing
   Main foundation types to be covered are strip footings, spot footings, raft foundations, slab-on-grade and piled foundations. Each foundation type will be discussed together with advantages, limitations, application and suitability for various soil types.
2. Site investigations for township proclamation and individual homes
   The lecture will cover methods of investigation, field and laboratory tests, requirements for problem soils (e.g. expansive or collapsible soils and dolomite ground), common pitfalls and legal requirements.
3. Design of foundations for housing
   The lecture will provide an appreciation of the design methods employed for the design of spread footings, raft foundations and piles. The intention is to create awareness of the available methods rather than to teach participants how to do the design. Foundation design is taught is a separate 5-day course.

4. The design of retaining walls and basements
   The lecture will cover the requirements of the national building regulations and SANS 10 400 regarding deep foundation walls and free-standing retaining walls. The determination of earth pressure using SANS 10160-5 will also be presented. The importance of damp-proofing and subsoil drainage will also be discussed with reference to the requirements of SANS 10021.
5. Problem soils
   This lecture will deal with the most common problem soils affect the performance of houses in South Africa including heaving clays, collapsible soils and dolomites. It will cover the recognition of these problem soil conditions, precautionary measures required, typical modes of distress and possible remedial measures.
6. Construction control and testing
   This lecture will describe test methods for fill materials, concrete and integrity of piles. It will also cover aspects which require particular attention during the inspection of work on site.
7. Role of players in the home building industry
   This will include the roles and obligations of home builders, competent persons, professionals, registration bodies (ECSA, SACAP and SACNASP), local authorities and the Council for Geoscience. The nature of professional indemnity insurance and the cover provided will also be discussed.

Resources Provided: Extensive references will be provided including technical papers, industry guidelines, reference works – all to the extent permitted by Copyright.

Peter Day July, 2025