Agricultural literature on soil moisture

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SUBJECT: Agricultural Literature on Soil Moisture

There is extensive literature in texts and journals on soil moisture from the agricultural point of view. Work carried on in this connection for many years has resulted in the development of much fundamental information which is applicable to soils as engineering materials, and may also be applicable in part to other non-metallic materials of construction such as stone, brick, mortar and concrete.

Professor W.L. Hutcheon of the Soils Department, College of Agriculture, University of Saskatchewan, has provided, in a private communication, a number of comments and a selected bibliography which are set out in this Note. This can provide a starting point in a review of the agricultural literature as part of a rational approach to a fundamental study of moisture in building materials.

There are two books which deal with the physical behaviour of soils in agriculture:

Soil Physics by L.D. Baver. 1948 (2nd Edition), John Wiley and Sons.

Physical Properties of the Soil by B.A. Keen. 1931, Longmans, Green and Co.

This latter book is now out of print but is a good source reference for physical properties.

The paper by Bodman and Edlefsen (1934) is suggested as a good starting point, to be followed by the introduction, pages 195-243, to "Thermodynamics of Soil Moisture" by Edlefsen and Anderson, and then by Chapter VI in Baver's book.

The following list is by no means complete but provides some selected references dealing with vapour adsorption, liquid movement by capillarity, moisture-temperature relationships, and heat of wetting of soils. There is an extensive bibliography at the end of each chapter in Baver.

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