Section

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

SOILS GEOLOGY SECTION

REPORT ON SITE INVESTIGATION

SOUTH AUSTRALIAN BREWING CO. LTD.

- Hotel Site - East Glenelg -

by

B.R. Griffith
Geologist

Rept. Bk. No.57/76
G.S. No. 2729
D.M. 1839/63

4th November, 1963

Section

RB 57/76

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SOUTH AUSTRALIAN BREWING CO. HOTEL SITE - EAST GLENELG

INTRODUCTION:

On the 18th October, 1963, a percussion bore was put down to 20 feet to test foundation conditions at the South Australian Brewing Company's hotel site near the corner of Morphett Road and Cliff Street, East Glenelg.

Details of lithology and penetration are shown on the geological log and the attached graphic log.

PROPOSED STRUCTURE:

The proposed hotel consists of a two storey steel framed structure supported on pad footings and a single storey structure built on strip footings seated near the soil surface.

STRATA PENETRATED:

The upper part of the sequence between ground surface and a depth of approximately 6 feet has undergone soil profile development. The soil is similar in certain respects to a degraded red-brown earth, Type RB9, the dominant soil type of the Brayville Association. However, the soil has been modified to a certain extent by the presence of fine alluvial quartz sand and pebble gravel.

The soil profile has developed on fine alluvial deposits of the Sturt River probably spread on the higher river flats during periods of heavy flooding. These deposits consist of silty sands with a varying proportion of clay. The sands become progressively coarser grained with increasing depth.

GROUNDWATER:

Water was struck at a depth of 10 feet. The static water level stands at a depth of 8 feet.

FOUNDATION CHARACTERISTICS:

Seasonal swelling and shrinking movements of significant magnitude occur in the clay horizons of this soil due to the reaction of the clay minerals present when water is absorbed or evaporated. The vertical component of these movements translated at the soil surface might be as large as 0.6 in.

The unconfined compressive strengths of the clays from a depth of 2 feet to 12 feet are set out in the attached geological and graphic logs.

The maximum depth of significant seasonal wetting and drying in the profile is of the order of 4 feet.

RECOMMENDATIONS:

It is recommended that all pad footings be seated at a depth of 6 feet. Here the clay has a moderately high bearing capacity. At this depth the footings would be below the zone of significant seasonal wetting and drying and above the probabl. maximum height of the water table.

For the single storey structure the recommended foundation practice is the construction of a deep beam type footing seated approximately 2 feet below the surface. At this depth soil movements would be appreciably smaller than at the surface and such a rigid footing should be capable of withstanding the stresses imposed. As an additional precaution against foundation failure it would be advisable to design the building as a series of small units connected in some way which would permit independent movement.

B. R. Griffith
Geologist
SOILS GEOLOGY SECTION

BRG:AGK
4/11/63

APPENDIX 1

GEOLOGICAL LOGS

PERCUSSION DRILL LOG

Department of Mines,
South Australia.

Bore No.: 1

Project: South Australian Brewing Co. - Hotel Site Purpose: Foundation Testing

Location: Morphett Road, East Glenelg Hundred: Section:

Depth: 20' R.L.: Core Diameter: 6" Commenced: 17/10/63 Completed: 18/10/63 Bore Serial No. 682/64

Bore Logged by: B.R. Griffith Date: 21/10/63 Driller: A. Sturak Docket No.: 1839/63

Depth From	Depth To	Description	Sample Depth From	Sample Depth To	Penetration Blows	Water Condition	Consistency or Density	Penetrometer Tons/sq.ft.
0	2'	Dark brown, friable clay loam. Sparse, small patches of ironstaining.	0	1'	45	Dry	Very dense.	
			1'	2'	105	Dry	Very dense	
2'	3'	Light brown friable sandy clay	2'	3'	112	Dry	Hard	>4.5
3'	9'	Light brown to red brown silty and slightly sandy clay. Sparse lime scattered irregularly in small pockets and hard columnar and rounded concretions. Sparse, scattered, fine, sub-angular to sub-rounded quartz pebbles.	3'	4'	53	Humid	Hard	>4.5
			4'	5'	33	Damp	Stiff	4.0
			5'	6'	23	Damp	Stiff	2.75
			6'	7'	41	Humid	Hard	>4.5
			7'	8'	46	Humid	Hard	>4.5
			8'	9'	25	Humid	Hard	4.5
9'	12'	Red brown sandy clay with very sparse lime in small scattered patches and nodules	9'	10'	10	Damp	Stiff	3.5
			10'	11'	11	Moist	Soft	<0.5
			11'	12'	13	Moist	Soft	<0.5
12'	17'	Red brown clayey silty fine to medium grained sand	12'	13'	24	Saturated	Loose	
			13'	14'	20	Saturated	Loose	
			14'	15'	19	Saturated	Loose	
			15'	16'	15	Saturated	Loose	
			16'	17'	17	Saturated	Loose	

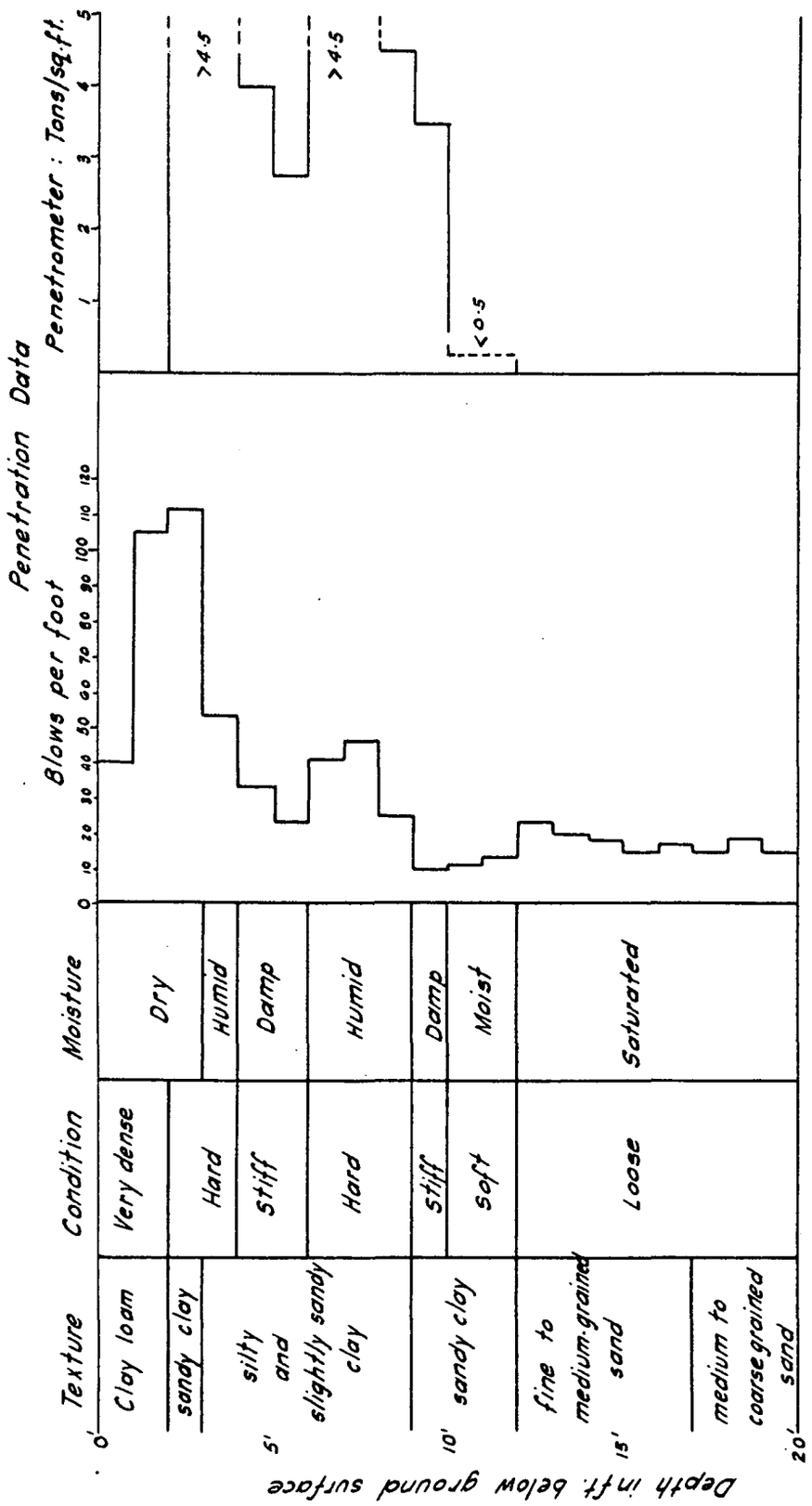
LOG NO. 1 - HOTEL SITE, EAST GLENELG (S.A. Brewing Co.)

Description		Sample Depth		Penetration	Water Condition	Consistency or Density	Penetrometer Tons/sq.ft.
To		From	To	Blows			
20'	Red brown clayey, silty medium to coarse grained sand.	17'	18'	15	Saturated	Loose	
		18'	19'	19	Saturated	Loose	
		19'	20'	15	Saturated	Loose	

END OF HOLE 20 FEET

WATER CUT AT 10 FEET

STATIC WATER LEVEL 8 FEET .



To accompany report by B.R. Griffith.

S.A. DEPARTMENT OF MINES

Approved	Passed	Drn.	MORPHETT HOTEL - EAST GLENELG S.A. BREWING CO. LTD. PERCUSSION BORE LOG OF PHYSICAL PROPERTIES	D.M.	Scale *Vert. 5' to 1"*
		Tcd. *A.W.*		Req.	S3527 Hag
		Ckd.			
Director		Exd.			Date *31-10-63*

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