MALAYAN CIVIL

ENGINEERS MEET



AT IPO H, 

# Visit To Enggor Bridge &

Tambun Waterworks, 2b (.33

CONSTRUCTION DEiCRIBED.



Main Trunk Road Across the Perak River.

A Successful+ meeting . of the

Institution of Civil Engineers was held at Ipoh cn Apr. 23 and 24

The members attendin@The meeting dined at Hotel, on the Saturday, Mr. C. J. M.c., M.Inst.C.E., the chairman of' the g\ssociation, presiding

On the Sunday morning a visit to t¥e new Enggcr Bridge was paid. The members expressed pleasure at the aesthetic quality of this bridge Oñd were conveyed over' same—by Messrs. F. G. Coales and— C. H. Clarkson the Public yorkSú Depar en±, n Mr. Favans;OthC Ltd.' the contracÿorS,

TlyeÞègor Bridge will carry the main trunk road across the Perak River about •four' miles upstream from Kuala Kangsar; replacing the pontoon was opened to •traffic in 1892, and which, in spitet of some vicissitudes, carried the main road tr c until December, 1931, when the ood tore the •pontcons from their anchors and wrecked the bridge

The Pontoon Bridge.

The pontoon bridge only carried one way traffic and severe traffic restrictions as to axle loads and speeds. were imposed.

Thus, in 1924, the decision -wa Creached that a more suitable structure must be provided and the bridge that is now nearmg eoñpletion will; it is anticipated, provide for all foreseen developments in road transport.

The bridge is 1,Ô28 feet 'long between the ends of the abutments and 928 feet long between the abutment hinges ; it provides a carriageway 30 feet wide but no footpaths.

The bridge' consists pf seven Q two hinged iteeLarches carried on mase ccncrete abutments and piers, each span has fouf '+ibs built up from steel plates and angles and suitably crpss braced.

The roadway is carried above the arched ribs on vertical members which are also braced and support the steel troughing which carried he concrete and macadam cariage-

The arch spans between ihe bear.. ings vary from 98 ft. 6 in. to 148 ft.x and since the ratio of rise to span is sensibly constant being 1 • 7, the

curvemgiyirig he bridge a suitable aesþheti&åppearance.

Designed By Crown Agents.

The bridge was designed by the Crown Agents for the Colonies and

there is no doubt that the general appearance and well-þalanced arches; are pleasing.

The live loading provided for is the following train, one 15 ton tragtor, with three 12 tcn tractors occupying a space of 72 ft. by 9 ft., the unoccupied portion of the carriage way is assumed to carry a live ioad equivalent to 100 lbs. per square foot of road area, the train to be placed on the span to cause maximum stresses and suitable provision is made for impact.

Temperature stresses are con-, sidered for a range of temperaturð of 100 deg. Fahrenheit and the) design provides for a wind pressure of 20 lbs. square foot of exposed area plus the live load train vertical projection.

The steelwork was fabricated in England bÿ Head Wrighton and Co., of Stockton-on-Tees, Each arch was erected in the Maker's yard and there inspected by the 4 Crown AgentS, the spans were then dismantled and shipped. The total weighÇof including the deck troughing, hand raikng and curbk 3sA,610 tons.

The contracts for the tion scf the abutments, -piers and etection of the steelwork were secured James Craig of Klang, and york began in April of 1928.