

## YOUR VIRTUAL DISCOVERY VISIT – 51 TO THE HERITAGE STORIES OF ROTTNEST ISLAND



*The Virtual Visit series was initiated during the COVID-19 pandemic when Rottnest Island was closed to the public due to social distancing restrictions and periods of use for quarantine from March to June 2020.*

*Now that the Island is again open to visitors, these Virtual Visits are continuing in 2021 to enable a further enjoyment of stories introduced at the Wadjemup Museum, the Chapman Archives or sites around the Island.*

*Enjoy, reflect and share.*

### **BUILDING THE ARMY JETTY – 22 CONSTRUCTION SQUADRON RAE**

The original timber jetty was constructed in 1905 to serve the Island's supply needs and after 1911 was generally referred to as the Excursion Jetty. As an integral part of the infrastructure required to install defence installations on Rottnest Island at Bickley and Oliver Hill, the 1905 jetty was substantially modified and extended in 1935 and 1942.



1935 and 1942 Jetty extensions in 1970

By late 1970 after 3 ½ decades of Defence management, the jetty was deemed to be unsafe to normal traffic. In early 1971, under the direction of Army Works and Engineering (AWE) Branch, 22 Construction Squadron demolished the entire timber wharf. Planning for a new wharf, and an adjoining barge hard standing, began soon after. Various concepts were proposed and through discussions with AWE Branch, Commonwealth Department of Works (the final approving authority), a final concept

was formulated which met the operational requirements for the barges and transport of 36 Water Transportation Squadron (Medium) RAE.

The approved design consisted of three rows of concrete filled BHP octagonal steel piles supporting internal steel beams encased in concrete. A reinforced concrete retaining wall tied in the inner row of piles as well as providing support for the universal beams. These beams in turn would support a decking of precast reinforced concrete slabs. Design also included a barge hard standing, 30 feet in width, consisting of a concrete anchor block set into limestone with a three (3) foot deep toe. Attached to the anchor block would be a “matting” of 42 precast reinforced interconnected concrete planks.

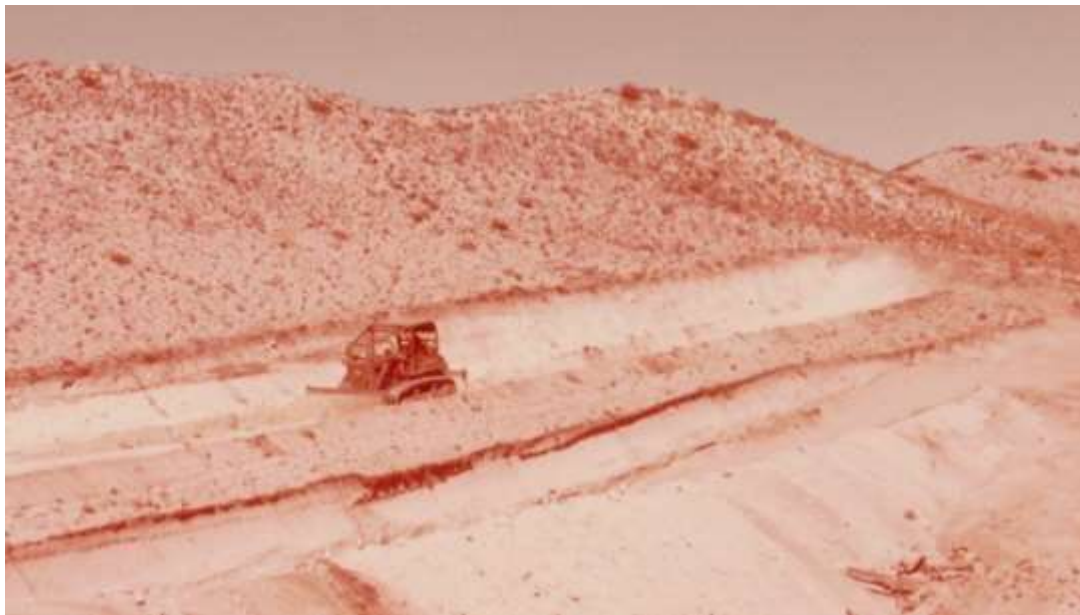


Army Jetty (1935, 1942) Rottnest in process of demolition 1972

The project was planned to start on 24 January 1972 and be completed by 17 June 1972 to coincide with the Waterloo Dinner to be held on that date. The initial movement to Rottnest Island involved personnel and plant equipment required to ready the accommodation for the main body, cleaning of the quarry site including the preparation of the haul road, and the construction of a temporary barge hard standing for the loading and unloading of equipment and stores. The movement of the main body of unit personnel, equipment, and stores back and forth to the mainland was coordinated by 36 Water Transport Squadron (M) throughout the entire project.

A quarry site on the Island was identified to provide 3,000 cubic yards of Class 1 limestone (individual stones ½ to 1 ton in weight) and significantly larger quantities of Class 2 limestone (golf ball and grapefruit size stones). Two methods of excavation were utilised: blasting with ANFO (ammonium nitrate/fuel oil) and ripping with dozers. In the production of Class 2 stone, excessive fines had to be removed prior to dumping on site. This necessitated the building of a “Grizzly” which was built using old

railway line readily available on the island and timber from the demolished jetty. [A “grizzly” is a metal grid used to separate grades (sizes) of stone].



Ripping Class 2 stone at the quarry site

Extension of the groyne was carried out by the dumping of Class 2 stone on the end and bulldozing the stone outward. This process continued to the full length required and until an approximate height of one (1) foot above Low Water Mark (LWM) had been reached. At this point, to prevent undermining of the base of the groyne, a “toe” of Class 1 stone was placed along its total length. Dumping then continued, raising the groyne level in layers of 6 inches, each layer being watered and compacted by use of a grid roller.



Dumping Class 2 stone to extend the groyne

Although specifications for Class 1 stone allowed the use of very large boulders, it was decided that a smaller (approx. 3 foot diameter type) stone would mainly be used. On the civilian groyne on Rottnest Island, of similar construction to the Army wharf, it was found that when using larger boulders, voids of considerable size were created



between the rocks and no interlock to hold the smaller stones was established. During the heavy North-West seas of winter, heavy erosion occurred, and subsequent high maintenance was required. To overcome this problem the smaller sized stones were used.



Levelling and compacting the groyne

During extension of the groyne, erection of the pile driving frame from the Eastern States was started. Since the frame specifications and instructions for erection were in the packing cases, prior knowledge about the frame was minimal. Hence an interesting “mechano” problem presented itself to the erection crew. A significantly hard layer of limestone, some two to three feet below seabed level, prevented some of the piles reaching their full penetration depth. However, all of the piles either reached refusal or gained a “set” well below that required by design calculations.



RB 23 driving piles

Slots required for the placement of the Universal Beams (UB) were cut into the piles and the beams placed into position. Since the beams required framework located above water, direct support was not a practical proposition. Use was made of special

hanger beams which supported the formwork by means of steel hangers fastened to the UB. Concrete pouring of the beams presented no problems as a hopper arrangement, (manufactured by the unit) slung to a crane, carried the concrete to the outermost limits of the beams.

Excavation for the retaining wall was carried out after beam placement and reinforcing placed ready for concrete pouring. On completion, the grid was ready for the precast concrete slab decking to laid. The planks for the barge hard standing and the decking slabs for the wharf had been precast in Karrakatta.

Due to its size, concrete in the anchor block for the barge hard standing required pouring in sections. The “toe”, consisting of some 30 tons of concrete provided a base for five subsequent sections each poured alternately and each consisting of approximately 15 tons of concrete. After the require curing conditions had been fulfilled, placing of the precast concrete planks proceeded.



Fixed portion of the barge hard standing.

When quarrying operations ceased, remediation began to return the area, as near as possible, to its original state. The topsoil, which had been stockpiled when stripping the quarry site, provided a six inch cover over the used area. This was followed by the planting of appropriate grass seeds and spreading of fertilizer. The plan was for winter rains to provide the necessary moisture to ensure growth. (*Investigation is ongoing to definitively identify the quarry site.*)



Reclamation works in progress.



(L) Blasting operations      (R) Pile driving frame assembled

### **The Waterloo Dinner**

The project was duly opened as planned with the unveiling of a plaque on 17 June 2012, the day before the Waterloo Dinner. The Royal Australian Engineers Annual Dinner, the Waterloo Dinner, was established on 18 June 1915 at Gallipoli. Lieutenant Stan Watson, RAE signals officer, whilst serving on Gallipoli was directed to construct a pier at ANZAC Cove. On the completion of “Watson’s Pier”, it was decided to celebrate the completion of the task. The date chosen was 18 June 1915, the 100th anniversary of the Battle of Waterloo.



After the war, engineers continued to conduct a dinner for all officers on the Friday closest to the anniversary of the Battle of Waterloo. As Lt Watson was a signal officer, it was traditional to invite a senior signals officer to the Dinner after the Corps of Signals was formed on Feb 14th, 1925. This tradition continues to this day.

Driving piles at Watson's Pier, Gallipoli 1915

*The information and photographs in this Virtual Visit are extracted from an informal report contained in a photo album provenanced to 22 Construction Squadron, Royal Australian Engineers held in the Archives of the Australian Army Museum of Western Australia.*

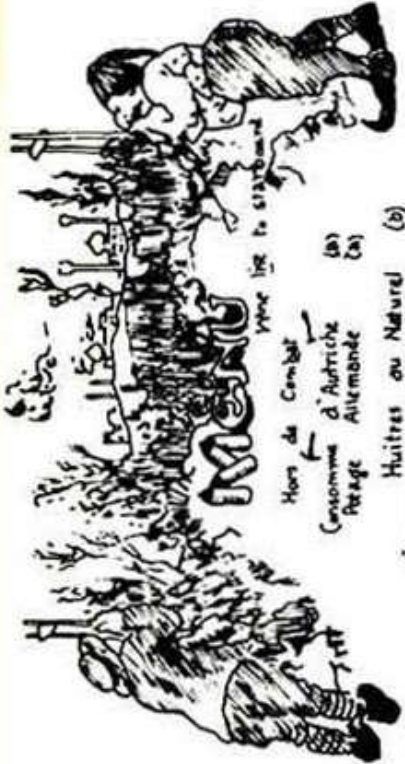
The story and its aftermath may also be found be found in *Sappers in the West* by Graham Mackenzie Smith

<https://wasappers.com.au/product/sappers-in-the-west-book/>

Menu from the original "Waterloo Diner" at Gallipoli



# WINE LIST



Usquabagh fra well kent  
 (Scots Vineyards)  
 Toddy (Not diluted wi' cauld)  
 Highland Taddy ("Were no fou")  
 Ecossais  
 Mandaise :- The Crater (no mine)  
 ("We call it lemonade in Ballyhooley")

Anglais :-  
 Bass' Beer  
 Beer  
 Beer  
 do  
 encore

Australian :-  
 Snakejuice  
 Woresershire Sauce  
 In this (Eau des Tuits Guillaumes  
 sequence) Painkiller  
 Blow the bugle, beat the drum,  
 Uppereut and out the come.  
 To Kingdom

Café  
 Cafe Turc (Eroffe chaud)  
 Liqueurs  
 Submarino, Drymouth  
 Curacold  
 Nipetbarrens may be ordered for 25s.

Huitres ou Naturel (b)  
 (fix sea heth its Peris)  
 Poisson  
 Jommon en fer blanc  
 Poussem d'Avril (25s)  
 (As all one, says the Sapper)  
 Piece de Resistance Fort  
 Boud Gellec d'Australie  
 Pouch Romoine  
 a la Bersagliers  
 (All the excitement of war, and only 25 per cent  
 of its danger)

Charlotte Russe  
 Bombes Sapeurs  
 Torpilles Genie  
 Obus Varies  
 Bomb - Bomb - bomb - BCY

- (a) More in it than ever
- (b) Very much on the shell
- (c) Domain, demain, toujours demain.

17. Gallipoli: menu of the first Corps Dinner, 18 June 1915. R.A.E. Archives, S.M.E.