Rafting Expedition at Pahang River
A Pictorial Journey

Assoc. Prof Ismail Said
Department of Landscape Architecture
Faculty of Built Environment
81310 Sekudai Johor
b-ismail@utm.my
Tel: (60) 7-5530714

Introduction

Raft is an old and earliest form of water transportation on earth. Prefabricated timber raft is a self-made recreational vehicle for drifting on rivers without rapids that is on middle and lower courses of the rivers. The Pahang riverscape, rich in its bio-diversity, is home as well as host to many animals in the jungle. A rafting expedition or journey through the waterways is a blissful experience. For the nature lover, the wondrous beauty and diversity of the riverine flora and fauna make the experience even more worthwhile than just usual leisure pursuits.

Rafting is an eco-tourism activity for natural-loving tourists to experience the placidity and serenity of riverine landscapes comprised of forests and human settlements. This activity allows people to work in-group and thus could attain memorable and harmonic relationships while getting the pleasure of being in the natural environment. It is a cheap recreational and eco-friendly means to spend leisure times without causing pollution to the river and its attributes. Apart from recreational pleasure, the completion of constructing the raft elevates the self-esteem, spirit and fulfilment of the individuals who contribute ideas and efforts in the design and construction of the raft.

Significance of Pahang River

Pahang River is the longest natural waterway in Peninsular Malaysia. It originates from the highlands of the main range (Banjaran Titiwangsa) above 2000m and meanders through valleys and floodplains, and terminates into the South China Sea. Rainwater was capture and filter by the dense and rich tropical rain forest in the main range and eventually forms the rivers. The dipterocarp and non-dipterocarp tree species has dominated the tropical rain forest around the Pahang River.

Pahang River is formed by two equally large and long tributaries, the *Jelai* for which it drains from the eastern slopes of the main range, and the *Tembeling* for which that it has its headwaters in the Terengganu Highlands in the east. In geographical aspect, the river begins in Kuala Tembeling, which was also the entry point to the National Park. The river flows southwards at velocity of 4.0 to 5.0km per hour. There are signs of increasing human and villages when moving outwards and ones will easily found small islands that formed in the middle of the water channel that enrich the riverscape.

The river widens to more than 250m and continues expanding its breath in the lowland of peat swamp forest till it terminates into the South China Sea. The raining season falls in the month of November to February, where the north-east monsoon bringing heavy rain rains to the east coast area. Water volumes increased and the surrounding area are flooded occasionally. Somehow, the river has become another source of economic for the local communities along the river and a few lakes that connect to the Pahang River by small branch of rivers, the mythical Lake Chini and mysterious Lake Bera add variation to the rivercape.

When moving downstream of Pahang River, two typical types of ecosystem can be recognised: one that supports terrestrial flora primarily along the riverbanks and one that supports aquatic life within its water. Along the river, a variety of flora and fauna can be found substantially at the fringes. In the upper course of the river, fringes may consist of montane or submontane forest types (River of Malaysia, 1992). The streams also shelter many fauna such as dragonflies, stonoelifes, caddishflies, and various beetles begin with their life in clean running freshwater streams.

At downstream, the interesting features include hill and lowland dipterocarp forest types. The vegetation here primarily consists of medium sized to small trees, shrubs and herbaceous plant. Trees like gapis (*Saraca*), pelawan (*Tristania*), mempari (*Pongamia*), minyak berok (*Xanthophyllum*) can be easily recognised along the river. As the river reaches the estuary, an obvious change in the riparian ecology and habitats occurs, leading to the distinctive lush vegetation life. A variety of palms, rattans, merbau (*Intsia palembanica*), putat (*Barringtonia*) can be found. As the river approaches the sea, especially in sheltered coastlines, mangrove and nipah palms are dominant. Mangrove plants such as api-api (*Sonneratia*), nipah (*Nypa fruticans*) and rumput piai (*Acrostichum aureum*) can be easily found. Mangrove swamps are extremely rich in benthic fauna and are also important breeding areas for prawns, fish, crabs and cockles. A wide range of animals such as birds, insects and bats carries out the pollination of mangrove.

As early as the 8th century, the Malays have settled along the Pahang river (Buyong, 1982). Small empire was established. The abundance of natural resources and including flora, fauna, tin and gold attract traders to the hinterland through the river route. Besides that, many battles were fought along the Pahang River against the intruders. The Malays were led by their persistent leaders such as Tok Gajah, Mat Kilau and Tok Bahaman. They often occupied the hit and run tactics and were able to bring down some of their enemies. In one of the battles at Semantan river, they brought down ten of the British soldiers and the corpses were floated on bamboo raft called rakit and were drifted down towards Pahang river. However, the raft got stuck in a bend of the river called *lubuk* for that is always deep with slow current and often whirlpool in motion. Due to that incident, the people of that village named their settlement as Kampung Lubuk Rakit.

Besides that, there are some myths that still believed by the older batch of people for which is the Sri Pahang journey through the Pahang River. Sri Pahang is one of the four dragons live in Tasik Chini. In order to seek revenge for his brother Sri Kemboja who was murdered, he travelled out Pahang River. However, when he travel pass Kampung Mambang, he heard the cocking of the chickens. He was turn slowly in to a stone which people believed that it was the Pulau Tioman today.

Before 1970s, the settlement along Pahang River was in a numerous number where there are more than 300 villages along the river. Owing to the big flood in year 1971, most of these villages were ravaged causing many villagers to resettle on higher grounds aided by the government resettlement program. However, there are still many villagers that continue the living heritage along the river rebuilding their houses on the riverbank.

Ethnic people such as Temoin and Jakun tribes have been living along the Pahang River for many centuries. Presently, their communities can still be seen along river's tributaries such as Tembeling and Lepar. They depend on the natural resources in order for them to survive. Their lifestyle is rather nomadic and made from forest material and simple construction. Some of the craft was made from rattan and timber such as dugout canoes was made and occupied as the transportation.

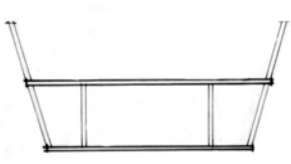
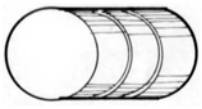
On the other hand, houseboat is built on hulls with a transom stern measuring some 12 metres in length and typically there is three section, one for living, one for cooking and eating and another one for washing and bathing. Typical setting for a Malay village along the river is where it is composed of timber houses with pitched corrugated metal roofs. Their housing compound was planted with fruit trees. Another significant scenery in the Malay village is where almost every

house was planted with kekabu (*Ceiba pentranda*) and they harvest the cotton to make pillows.

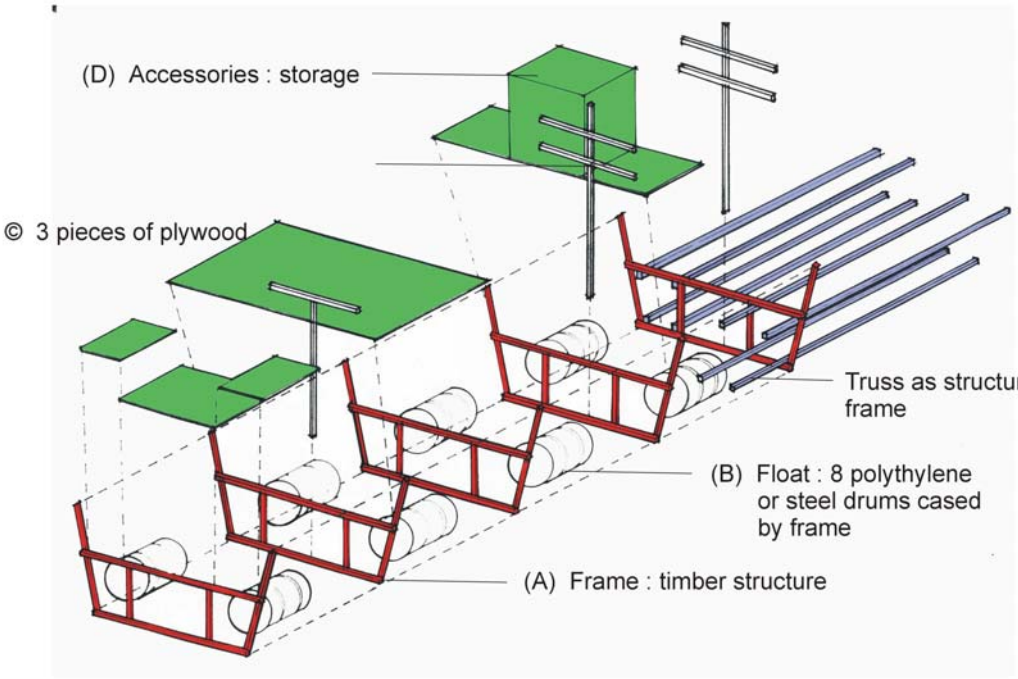
Prefabricated Raft

Prefabricated raft is a recreational vehicle to carry nature-loving tourists drifting downstream on a river. It is made from used materials including timber and drums. The major components of the raft are frame, float and deck. All the components can be made in workshop and later can be assembled at the riverbank. The frame is made from medium hardwood timber and prefabricated in workshop using simple lap joint fastened by bolt and nut. Five frames are required to make a raft of dimension 4.5m length and 3.2 m width. It utilises 8 polyethylene or steel drums as float to get buoyancy that can carry a load of 800 to 900kg. The load comprises of 7 to 8 adult passengers, camping equipment and food that last 7 to 10 days journey. The load is distributed equally to the frame by a deck, 3 pieces of 14mm thick waterproof plywood. Raft accessories such as mast to support tent, paddle, and storage compartment to keep food and camping equipment. When all components are prefabricated they can be loaded on 1.5 tonne pick-up and send to the starting point of the raft journey at the river; the components can be assembled within 25 minutes by a team of 8 crews.

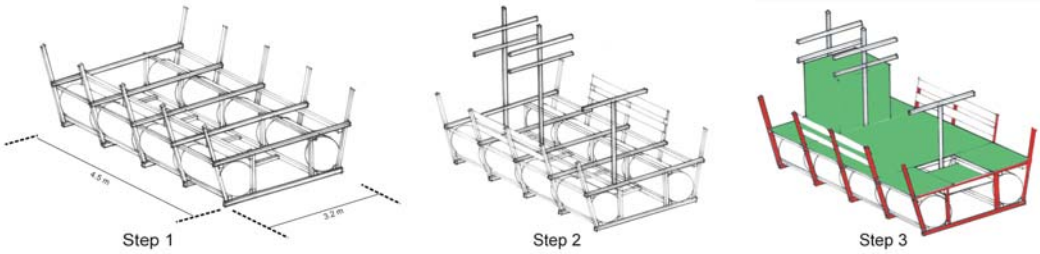
Prefabricated raft material

FRAME	FLOAT	DECK
		
-Structural frame of 45mm x 45mm medium hardwood	-8 pieces polyethylene drum with 214 litre capacity, 925 in height and 580mm in diameter	-3 pieces of 14mm thick waterproof plywood

Raft components



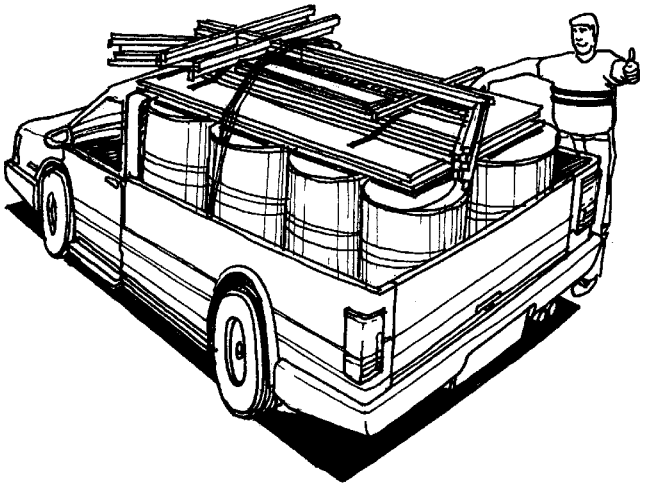
Raft assembly

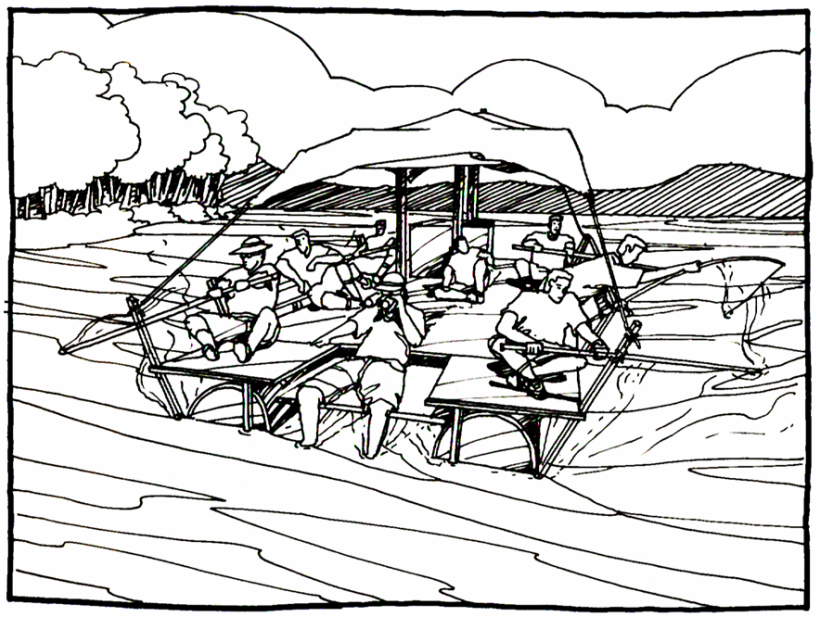


Prefabricated raft is an appropriate recreational transport to view the landscape beauty of a river. It moves according to river current, generally range from 5 to 4.2 km per hour. A day trip may cover a distance of 33 to 35 km. Other recreational activities while drifting include swimming, fishing and nature photographing. Upon reaching the destination of the journey, the raft can be dismantled and transport back by pickup from other rafting trip. It can be easily converted to fish cage by attached net in the centre or simply used as temporary river jetty.

Advantage

1. A team of 8 people could prefabricate the raft within 3 days
2. Assemble and dismantle time approximately 25 minutes
3. Cheap to construct (about RM 450) used timber and drums
4. Flexible to expand and high carrying capacity
5. Adaptive reuse for river terminal or fish cage





Drifting with prefabricated raft on a river

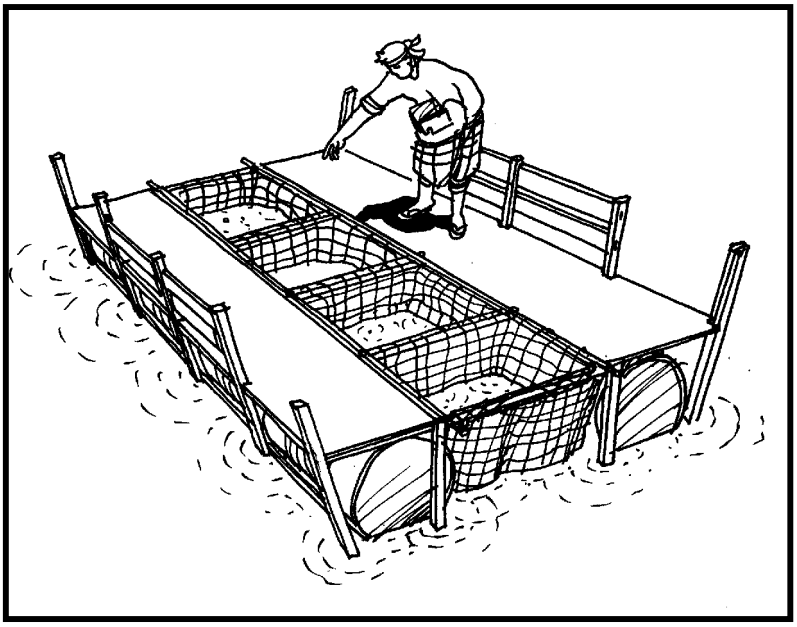


Figure 4: Adaptive reuse of raft into a fish cage

Arrival at starting point



Assembling of the Raft
















Dismantling of the raft at termination point










Expedition on river

Camping activities




















Return