DAVIS MARINA

MANAGEMENT PLANS

OPERATIONAL / ENVIRONMENTAL

15 July
2008

Health, Safety, Environment and Community Policy

At Davis Marina we are committed to ongoing reforms to meet and exceed our community responsibilities regarding health, safety and environment.

We will achieve this commitment by:

1. Training staff and contractors about safety and environmental best practice.
2. Educating and guiding our clients towards better safety and environmental best practice
3. Avoiding waste and encouraging recycling
4. Reducing our use of energy
5. Working with industry associations to achieve best practice
6. Providing the best possible services to our clients
7. Implementing a strong maintenance program
8. Maintaining involvement in community and council activities

We will apply conservative risk management principles to new and ongoing work and will regularly review this policy and make our progress public.

Bruce Davis
Manager

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1. INTRODUCTION

Davis Marina's principal business activity is to provide safe moorings and berths for their client's boats along with safe and reliable access to and from these craft. The marina also provides support services such as mechanics, electricians and covermakers.

The Marina must ensure that it complies with O H & S and environmental legislation. The Marina has participated in an industry partnership program with the NSW Government and Manly Council.

The Marina intends to lodge a redevelopment program with Manly Council in the near future. The purpose of the redevelopment is to improve the quality of services provided and to meet the requirements of O H & S and the Pollution of the Environment Acts while improving financial viability.

2. OBJECTIVES

The objectives of the Marina are as follows:

1. Improve facilities for the clients and local community
2. Improve environmental performance
3. Comply with the requirements of Workcover
4. Improve financial viability

3. PRINCIPAL BUSINESS ACTIVITIES

The principal business activities are as follows:

1. Renting moorings
2. Renting berths
3. Slipping
4. Cleaning
5. Antifouling
6. Polishing

These activities are supported by other activities such as:

1. Shipwrights
2. Marine Engineers
3. Electronics
4. Refrigeration
5. Gas Fitter
6. Cover Maker
7. Spars and Rigging
8. Yacht Sales
9. Tender Service

4. PROCESSES ALLOWED

The following process will be allowed at the Marina

1. Timber work
2. Fibreglass repairs
3. Polishing
4. Sanding
5. Cleaning
6. Hand painting using brushes and rollers
7. Touch up spray painting using no more that 200mL of polyurethane per day
8. Jetblasting

5. PROCESSES NOT ALLOWED

1. Sandblasting
2. Spray painting more than 200mL per day
3. Washing mechanical components

6. PLANT AND EQUIPMENT

The following table details all plant and equipment at the Marina

Plant	Description
Building	Weatherboard
Jetties	Piles Beams and decking Berth pontoons Mooring lines Eye bolts and travelers Pick up & drop off berth Work berth
Toilet/Shower	Building Water heater Toilets and basins Shower
Dinghy Pontoon	Ramp Float
Moorings	Blocks Ground chain Rub Chain Rope Deck chain Buoy ropes Buoys
Cranes	Back door crane Mast crane
Slipway	Two slipways, large & small Tracks Cradles, decking & bunding Winch, wire turning block Ladders & scaffolding
Rumpus	Hull & deck

	Engine Winch
Runaround	Hull & deck Engine
Dinghies	Six rowing dinghies
ANM 29E	Utility (vehicle)
Trailer	Box trailer
Tools	Various
Electrical System	Switchboard Cabling Power Points Lights
Water System	Pipes & taps Backflow
Telephone	Three lines and six hand sets and fax
Fuel System	Tanks Pipes Booster pumps Bowsers Spill bunding
Compressed Air	Compressor Lines Regulator
Computers and Office Equipment	Computer (Janet's) Computer (Bruce's) Computer (Workshop) Network and cables Virus protection Internet connection Web site
First Aid	Kit
Landscaping	Paths Gardens Drains
Trade Waste	Industrial bin Wheelie rubbish bins
Signs	Welcome sign Signage East Marina Signage West Marina
Security	Building alarm Marina alarm
Plant Hire	Oxy bottles

7. HUMAN RESOURCES

The marina operates with a normal staff of six full time staff and four part time staff who have the following job descriptions.

Manager

1. Attend to matters raised by staff members
2. Draw up maintenance and improvement programs
3. Attend to human resource issues
4. Attend to matters arising from Government and industry groups
5. Supervision and involvement in all Marina activities
6. Attend to marina clients and customer service issues
7. Deal with various regulatory authorities

Office Manager

1. Telephonist
2. Bookkeeper
3. Manage weekend staff
4. Manage mooring and berth register and waiting list
5. Analyse water and energy performance
6. Keep First Aid kit up to date

Slipmaster

1. Slipping
2. Jetblasting
3. Antifouling
4. Polishing
5. Repairs and maintenance to slipway
6. Analyse jetblaster water usage
7. Disposal of paint scraping and dust
8. Manage paint and chemical store

Shipwright

1. Repairs to clients' boats

Weekend Manager

1. Answer enquiries
2. Manage mooring and berth register and waiting list
3. Sell ice and drinks

Tender Driver

1. Drive the tender

8. STANDARD OPERTING PROCEDURES

i. Definitions

Alignment	Whether or not the supports are in a straight line in the vertical plane
Arms	Vertical post to prevent boat from rolling over when on the slipway
Balance Point	The point on the keel where the boat could be supported in equilibrium together with the slip arms

Boatman	A person who positions a boat in the slipway cradle so it can be hauled from the water
Centre of Gravity	The point at which the boat could be supported and be in equilibrium
Chocks	Small pieces of timber placed under the slip wheels to prevent the cradles rolling down
Clearance	The distance from the hull to the slipway cradle
Cradle setup	The configuration of supports on a slipway need to safely slip a particular boat
Gauge	The spacing between railway lines
Landing	The moment when a boat's keel first touches the slipway
List	The amount a boat leans to port or starboard
Load binder	A system of levers to tension a chain which tightens a slip arm against a boat
Pitching	The way a boat moves in the fore and aft direction by moving its bow or stern up or down
Rolling	The way a boat rolls from side to side
Slipway	Inclined railway/ramp sloping to the water where boats are repaired
Springs	Ropes tied from the slip arms to the boat in order to prevent the boat from moving fore and aft
Stability	The amount the boat will pitch or roll whilst on the slipway
Supports	Blocks, beams or bow rests that hold a boat up on the slipway
Winch man	A person who controls the slipway winch

ii. Slipways

General

The marina owns and operates two conventional slipways

Specification

ITEM		BIG SLIP	SMALL SLIP
Location		Further from shed	Closest to shed
Gauge		7 ft	6 ft,
Number of trolleys		Three	Three
Arms		Scissor movement	Main supported by prop arm and wedge
Limits	Weight	40 Tonnes	8 Tonnes
	Beam	6 metres	4 metres
	Draft	3 metres	1.7 metres
Winch	Motors	Electric	Electric
	Gears	Gear train and 4 speed gear box	Flat belt and gear chain
	Reversing	Electric reversing switch	Electric reversing switch and dogs
	Wire parts	Two	Single
	Start switc	Star delta button and lever	Button
	Stop butto	Button	Button

Job Descriptions

Usually a two person team is required to slip a boat. The Winch man drives the winch and initially assists in positioning the boat. The Boatman positions the boat in the cradle, checks it has been landed correctly, checks stability and corrects the list. It is also usual to use a two man team to launch a boat. The Winch man controls the winch and the Boatman releases the arms as the boat begins to float.

The Boatman is the team leader and makes the decisions. He needs advice on the list and position of the boat from the Winch man to make these decisions.

Operating the Winch

Both winches are powerful machines and great care should be taken when operating them. Time should be taken to check that the cradle, boat, scaffolding and the winch is set up correctly and all personnel are clear before starting the winch.

The winch man **must never leave** the winch pit while the winch is in operation.

OPERATING THE WINCHES

Operation	Big Slipway	Small Slipway
Start	Release the brake until the cradle is on the point of running, push the start button, after 2 seconds push the lever to the right and then release the brake	Press the brake pedal with your foot, release the screw jack on brake and press the start button lift your foot from the brake
Stop	Press the stop button, apply the brake and push the lever to the left	Press the stop button, press the brake pedal with your foot and apply the screw jack
Disengage gears	Stop the winch, apply the brake and disengage dog clutches using the clutch lever	Stop the winch, apply the brake and disengage dog clutches using lever
Lowering cradle	Disengage gears, release brake until cradle moves.	Disengage gears, release brake until cradle moves
Changing gears	Stop winch and change gears using the gear stick	Stop the winch, reverse the motor using the electric switch, start and immediately stop the motor while at the same time keeping pressure on the gear lever
Reversing under power downhill	Stop the winch. Use electric reversing switch to reverse the motor direction. Start the winch constantly check that the cable is always under tension and feeding from the winch. If the cradle stops the cable will go slack and the winch must be stopped immediately to prevent excess cable becoming jammed in the winch.	Stop the winch. Use the electric reversing switch to reverse the motor direction. Start the winch constantly check the cable is always under tension and feeding from the winch. If the cradle stops the cable will go slack and the winch must be stopped immediately to to prevent excess cable becoming jammed in the winch .

Operating Slip Arms
The slip arms are heavy and care should be taken when moving them.
The Big Slip
The arms are moved out using rope tackle but they usually move in under their own weight. Care should be taken to control their inward movement using the tackle system. Ensure that the tackle system is cleated off when arms are not being moved to prevent them moving unexpectedly.
When locking arms against the boat release the rope tackle, use the load binder to tension the chain and the re cleat tackle with a little slack.

The Small Slip
There are three ways of moving the arms. Fine movements are achieved by means of the wedges and a timber mallet; medium movement by removing the pin and moving the prop arm up or down the main arm to a new position; coarse movement by removing the pins in the bases of the prop and or main arms and moving the arms to a new position. This is a two man job. Before removing the pins ensure the wedges have been removed.
Signals
The Boatman makes the following signals to the Winch man.

Action	Meaning
Index finger and arm vertical up	Winch cradle up
Index finger and arm vertical down	Lower cradle
Palm of hand held facing the Winch man	Stop cradle
Lower part of arm held horizontally athwartships	Which way is boat listing?
Lower part of arm held fore & aft	Is boat in centre of cradle?

Cradle Set Up
A book is kept of cradle set ups for commonly slipped boats. A correctly set up cradle will reduce the time and effort required slipping a boat and also improving safety.
Beams are mostly used to support yachts with fin keels while it is more common to use blocks to support powerboats or yachts with long keels.

Consideration should be given to the following factors when setting up cradles:

CRADLE SET UP

Issue	Consideration
Weight of boat	Does the weight of the boat exceed the capacity of the cradles or is there a point Load which exceeds the capacity of the beams or wheels?
Draft of the boat	Does the draft of the boat exceed the draft of the cradle?
Beam of the boat	Does the beam of the boat exceed the beam of the cradle
Strength of the boat	Does the boat have enough strength to support itself?
Number of supports	Some boats require multiple supports especially timber power boats
Spacing of supports	Are multiple supports located to distribute loads evenly:
Fore and aft height of supports	Are the supports arranged correctly to achieve proper balance of the boat to minimise pitching?
Alignment	If multiple supports are in use are they in perfect line?
Use of bow rests	Does the boat need a bow rest to achieve balance?
Centre of gravity	Will the centre of gravity fall between the supports
Balance point	Will the balance point be close to a support?
Clearance	Will items like props, shafts, rudders and sounders have enough clearance from the cradle, blocks and beams?

Positioning the boat in cradle

A boat that is not positioned correctly will not land properly on her blocks or beams. Boats need to be positioned correctly and properly aligned fore and aft. This is achieved as follows:

1. Move boat into cradle and secure by the use of the fore and aft springs
2. Adjust arms so they are about 300mm wider than the beam of the boat.
3. Winch the cradle up until the boat has about 150mm of water under her keel
4. Adjust the springs so the boat is moved into the correct position fore and aft over her supports
5. Adjust the arms so that the boat is in the centre of the cradle athwartships and reduce the arm spacing to within 75mm or 100mm of the boat's beam.
6. Adjust the arms so that the boat is not skewed
7. It maybe necessary to repeat steps 4, 5 & 6 as these actions effect each other.

The Winch man should guide the Boatman in this process using hand signals.

Landing
A boat makes a landing when it first touches the cradle as it is winched up the slipway. Two or three point landings are best but one-point landings are probably more common. Between the first and second point landing the boat may develop a list which can be difficult to correct.

Two Point Landings
Stop the cradle when the boat has been lifted out of the water about 100mm. If it is a two point landing the boat will roll evenly. If the boat has landed in the correct position the arms can be secured against the boat correcting any list during this process.

One Point Landing
Stop the cradle when the boat has been lifted out of the water about 100mm. Unlike a two point landing the boat will pitch and skew as she rolls. Let in the arms closest to the point where the boat has landed, so that a bad list is prevented from developing. Check that the boat has landed in the correct position. Lift the boat further until it lands on the second support. Secure the arms against the boat correcting any list during this process.

Checking Stability
With a fin keel yacht, lift it until the hull is just clear of the water. For other boats lift them until the cradle is taking about 30 per cent of the weight.
Check the following:

1. Is the boat sitting at too steep an angle – bow up or down?
2. Does the boat have too much list?
3. Is it sitting on the bearers correctly?
4. Are the prop shafts or leg drives taking any loads?
5. Is the rudder aground? Check if the steering is free.
6. If it is a yacht, rock the bow or stern to make the boat pitch. This will indicate if the boat has landed near the point of balance and whether it will need re-slipping or ballast added.

Separating and chocking cradles
Each slipway has three cradles and a maximum of four boats can be slipped at any one time. To achieve this, the cradles may need to be separated and chocked. Timber chocks are placed under each wheel of the cradle. The chocks are flat on the bottom and the upper surface should be circular. This radius should be about twice the diameter of the wheel being chocked. The wedges should be made of good quality hardwood. Cradles can be attached with chains which prevent the cradles becoming separated when rolling two or more cradles down the rails. The cradles should not be moved without the chains and it is important to ensure there is no slack in these chains. The chains should only be released when the upper cradle has been chocked properly.

Launching
Perform the following check list:

1. Remove scaffolding, planks, ladders, trestles, scaffold bars.
2. Check that the cradle has been cleaned. (No paint flakes, dust or other pollutants)
3. Check all arms are secure against boat
4. Check all rope tackles are cleated with minimal slack
5. Check cradles are chained together
6. Check the boat has not moved in the cradle
7. Check all personnel are clear of the slipway
8. Winch boat up to remove weight from chocks if they are in use
9. Remove chocks
10. Check all personnel are clear of the slipway
11. Lower cradle into water and stop just before boat begins to float
12. Be careful not to lower the cradle over the end of the track. Keep the mark on the wire on the drum
13. Release the load binders on one side only and use tackles to move arms away from the boat. If using the small slipway remove the wedges and move the prop arm up the main arm to a new position.
14. Lower cradle and re-float boat
15. Remove springs and push boat clear of cradle by hand before starting the engine.

Warning
Be observant and watch the cradle, the boat and the winch whenever the slipway is in use.

iii. Scaffolding and working height
The marina recognizes the importance of ensuring that all scaffolding is used correctly.
Storage
All scaffolding is stored on the rack on the Eastern Marina
Condition checking
All scaffolding should be condition checked before use
Usage
Trestles should be chocked and checked for stability before use
Ladders should be chocked and stabilised with a rope tie at the top end
If scaffold planking is more than 2.4 metres above ground or decking then the following applies:

- Double planking and handrails shall be installed

Or

- A harness shall be used.

iv. Working with tools
See Authorisation

v. Fuel System
After discussions with our fuel suppliers, Caltex, it was decided to suspend fuel sales due to recent changes to the relevant Australian Standard. The fuel system will be removed and not replaced and it should not be used.

vi. Lockup Procedure

General

After work the premises must be secured to safeguard valuable tools, equipment and client files. Problems experienced in the past have included stolen dinghies, entry onto Marina by fishermen and burglary of building and clients' boats. To minimise problems in the future a Lock Up Officer is identified.

Who Locks Up?

On weekends the Lock Up Officer's responsibility will be divided equally between the Office Manager and the Tender Driver. During the week Peter Muller will fill the role of the Lock Up Officer except that when he is away from work it will be the responsibility of the workshop staff. In these circumstances Peter McDonald will take responsibility on an honorary basis. It should also be noted that for the following pieces of equipment the principal user should lock them and the Lock Up Officer will double check:

1. Air compressor
2. Ladders, trestles and planks
3. Jetblaster

Procedures

The following procedures should be followed:

Runaround

1. Secure mooring lines
2. Remove bungs
3. Pump bilge
4. Turn off power
5. Return key to office

Rumpus

1. Secure mooring lines
2. Remove bungs
3. Pump bilge
4. Turn off power
5. Return key to office

Dinghies

1. Lock
2. Stow oars
3. Pump if necessary

Gates

1. Lock gate on East Marina
2. Close rope gate on West Marina

Air Compressor

1. Turn off air compressor

Ladders Trestles and Planks

1. Ensure they will not float away
2. Return unused scaffolding to lock up on East Marina

Building

1. Turn off the 415 volt power
2. Turn off computers
3. Push trolley into office
4. Lock front door, back door, and side doors
5. Turn off power points and check hot water system is unplugged
6. Turn off heaters
7. Return all paints and chemicals to fire proof cabinet and close
8. Turn on alarm

Jetblaster

1. Coil hose on reel
2. Return lance to box
3. Lock box and ensure key is returned to key rack

Working Back

When a staff member works back after hours the Lock Up Officer will perform as many of his duties as practical and then notify the late worker of his responsibility to complete the process.

vii. Dinghy Pontoon

The principle purpose of the dinghy pontoon is to moor the marina dinghies and provide clients access to them. When all of the six marina dinghies return to the pontoon they occupy the entire space.

The marina does not have sufficient room in its lease area for the storage of client's dinghies. From time to time clients may find it convenient to have short term tie up to the dinghy pontoon for the purpose of landing, unloading or arranging transport. To assist our clients in these circumstances the marina will allow the use of the pontoon for a maximum of three hours

viii. Soft Stand

Description

The soft stand is a system that allows small yachts to be stored clear of the water. It consists of an electric chain hoist supported by a steel beam atop of two piles. The stored yacht is lifted clear of the water and prevented from rolling by two stabilisers that touch the deck and from pitching by a stabiliser at the transom

Operation
To lift the boat

- Ensure that mast can't fall forwards (have a crew member lean against forward face of mast).
- Remove back stay
- Push or paddle boat backwards into berth
- Replace backstay
- Move boom to one side
- Trim the balance of the boat by moving loose equipment and sails into correct position
- Choose carefully the correct button on electrical control box. Using the wrong button may damage another boat
- Lower lifting hook
- Attach to slings to boat and hook
- Carefully raise boat until the stabilisers nearly touch the deck. The should just roll from one stabiliser to the other. A 10 to 20mm gap is ideal.
- Slide in the aft stabiliser.
- Connect and tension aft rope

To lower the boat use the reverse procedure.

ix. Out side Labour

Introduction
Davis Marina has secured comprehensive insurance to cover its operations. The insurer requires that we minimise our exposure to risk wherever possible and this is also in our interest because it will allow us to renew our insurance and obtain reasonable premiums in the future.

Contractors
If a marina client employs someone for reward (money, contra deal etc) they are known as a contractor. Contractors can be categorised into three groups as follows:

- Marina staff
- Preferred Contractors
- Outside Contractors

Marina staff are covered by the marina's insurance and preferred contractors have their insurance checked by the office manager on a regular basis. Outside contractors are required to sign in to the Marina Office on a daily basis and to have their insurance checked. Inadequate insurance means they cannot begin work.

Typically contractors undertake the following trades and tasks:

- Mechanics
- Electricians
- Electronics
- Plumbing
- Gas fitters
- Cover makes
- Carpet fitters
- Riggers

- Or any tradesmen or workers who use equipment, tools, dismantle or assemble equipment

Some outside workers pose a very minimal insurance risk and the marina will not require proof of their insurance. They are as follows:

- Yacht Brokers
- Surveyors not entering marina work space
- Sales person who are demonstrating equipment

Others may be added to this list by either Janet or Bruce.

Work space
Under the Occupational Health and Safety Act, the workshop and slipways are considered the work space. The Act states that all workers entering the work space are required to complete an induction course. This includes the marina staff and the preferred contractors.

Accompanied work space entry
Clients, marine surveyors, yacht brookers etc. may enter the work space if they are accompanied by a marina workshop staff member.

x. Toilets and showers
The toilet block was built by Davis Marina on land it leases from Manly Council. The cleaning is the sole responsibility of the marina. On busy days its capacity is just able to cope comfortably with the demand generated by the marina.

The toilets are not available to:

- The general public
- Private boat owners not associated with the Marina
- North Harbour Sailing Club
- Sea Scouts

There are public toilets at Forty Baskets Beach and North Harbour Reserve. People other than the marina staff and clients should be directed to these public facilities.

9. PREFERRED CONTRACTORS

The following Preferred Contractors have been chosen by Davis Marina

Bob Scott Marine Trimming	Cover Maker
Northern Beaches Marine	Outboards and Stern Drives
Aquatronics Marine	Electrics and Electronics
Lacey Marine Engineering	Diesel Engineers
Sydney Yachting Centre	Boat Sales

Theses contractors have Public Risk and Workers Compensation Insurance lodged at our office.

OUTSIDE CONTRACTORS

Our clients are most welcome to engage a contractor of their choice, however, any outside contractor must have a copy of their current Public Risk and Workers Compensation Insurance lodged at our office.

11. EMERGENCIES

The Marina could be subjected to a wide range of emergencies

i. Fire

Fires may start in the following locations:

1. Bushland fire
2. Building
3. Boat

The Marina has a number of fire hose reels and fire extinguishers. Each staff member is encouraged to familiarise themselves with this equipment during the emergency drill sessions.

ii. Heavy Rain

Heavy rain may cause the following:

1. Minor flooding of the boatshed from road run off
2. Water damage if combined with inadequate pruning of garden plants and trees
3. Rain can fill any vessel quickly. In fact, rain can fill dinghies to the gunwales over night and the same is true of *Runaround* and *Rumpus* if the drains are blocked. In very heavy or extreme rain *Rumpus* and *Runaround* will need pumping daily and the night watchman will need to check them late evening.

iii. High Wind

High winds can cause problems with boats on the slipway and the marina berths and also loose equipment left lying around.

Slipway

If high winds are forecast or being experienced, Acro Props shall be placed from the boat's hull to the cradle and also from the cradle to the concrete support pads. From previous experience westerly and north westerly winds impact adversely on the slipway. Winds from other directions are of minor concern.

Berths

High winds from the north west and west can load marina lines and waves have swamped very low free board boats on the West Marina. Extreme winds from the south east to east have created seas that can break weaker marina lines on the Eastern Marina.

Moorings

Recent experience has shown that the marina mooring tackle is more than adequate.

Dinghies

The marina dinghies can sustain damage and swamping during extreme westerly and north westerly winds when moored at the dinghy pontoon. This can be avoided by tethering them to the eastern side of the West Marina in the vicinity of the work berth.

iv. Storm Surge

Surging is caused by extremely large swells from the south east lashing the metropolitan coast. They cause a surging wave action in North Harbour that is like an extremely vigorous tide. On very rare occasions this can swamp the marina dinghies, break marina lines and cause boats on moorings to hit each other. The water level can rise to more than 500mm above the astronomical tide prediction overtopping the Marina and flooding the boatshed. On such occasions it is important to take the following action:

1. Open the boatshed doors to allow the building to be flooded and prevent it from floating off its foundations
2. Tether the dinghies from the Marina in the vicinity of the work berth
3. Prevent debris from jamming under the building
4. Raise sensitive equipment such as computers above potential water level

12. FIRST AID

Training

The Marina encourages all staff to undertake first aid training. The Marina will reimburse staff for the cost of any recognised adult first aid course.

Personal Injury

Any personal injury should be brought to the attention of one of the Marina's first aid officers. To assist the officer a first aid kit is located in the marina office. All staff injuries should be reported to Work Cover.

First Aid Kit

This kit will meet all legislative requirements. It will be the responsibility of the Office Manager to keep the kit up to date.

13. AUTHORISATION

Machinery	Staff Member								
	Peter M	Peter MU	Janet	Ken	Bruce D	Marleen	Judith	Richard	Warner
R'Round	yes	yes	No	yes	yes	No	No	yes	yes
Rumpus	yes	yes	No	yes	yes	No	No	yes	yes
Soft Stand	yes	yes	No	yes	yes	No	No	yes	yes
Mast Crane	yes	yes	No	yes	yes	No	No	No	No
Engine Crane	yes	yes	No	yes	yes	No	No	No	No
Band saw	yes	yes	No	yes	yes	No	No	No	No
Planner	yes	yes	No	yes	yes	No	No	No	No
Thicknesser	yes	yes	No	yes	yes	No	No	No	No
Circ saw	yes	yes	No	yes	yes	No	No	No	No
Welder	yes	yes	No	yes	yes	No	No	No	No
Oxy Act	yes	yes	No	yes	yes	No	No	No	No
Computers	yes	yes	yes	yes	yes	yes	yes	yes	yes
Slip winch	yes	yes	No	yes	yes	No	No	No	No
Slip boatman	yes	No	No	yes	yes	No	No	No	No

14. ENVIRONMENTAL MANAGEMENT PLAN

The Marina is a modest user of energy but there are work practices and use of equipment that can lead to a reduction of energy usage.

i. Energy Conservation

The following equipment has been identified as users:

1. Slipway
2. Jetblaster
3. Hot water system
4. Heating
5. *Runaround*

The use of the slipway and jetblaster is minimized to reduce the use of electricity, the water heater is electric and instantaneous and the *Runaround* is powered by a modern diesel engine which is regularly maintained.

ii. Wash Water

The Marina has two slipways where boats are cleaned and antifouled. The cleaning process produces an amount of wash water that goes into the harbour. Through government regulation the formulation of antifouling paint has been changed to make the paint more environmentally friendly. The Marina will include in its redevelopment plan a proposal to capture and treat this water. In addition, it is intended to install rain water tanks to collect roof water. This water will feed the boat cleaning system.

Wash Minimisation

Marina staff will avoid creating excessive wash and scouring of the seabed when manoeuvring powerful motor boats. Clients who own such boats will be advised that it is the policy of the Marina to protect the seabed and encourage the growth of seagrass with the exception of Caulerpa Taxifolia.

iii. Chemicals and Paints

The marina workshop stores and uses the following chemicals:

1. Paints
2. Resins
3. Acids
4. Thinners
5. Glues

A 250 litre fire proof cabinet is used to store these chemicals and paints. The preparation bench is located in the bunded area.

iv. Fuel Storage and Dispensing

The Marina has unleaded petrol and diesel storage tanks capable of holding 2,500 litres each. Fuel lines lead to bowsers at the end of the West Marina. As a result of changes to the Australian Standards covering the storage of flammable liquids the management has decided to cease the storage and sale of fuel and remove the tanks pipes and bowsers. A spill kit is available.

v. Paint Scrapings and Dust

Paint scrapings and dust are generated by the workshop. The following sources have been identified:

1. Workshop
2. Slipway
3. Maintenance on boats in our berths
4. Maintenance of the premises

Collection and disposal is managed by the Marina in the following manner:

1. Staff education
2. Client education
3. Publishing information in our catalogue
4. Use of tarpaulins
5. Use of our paint flake catcher(a unique Davis Marina design)
6. Use of vacuum cleaner
7. Cleaning cradles before re-launch
8. Use of vacuum dust collectors on sanding machines

vi. Spray Painting

Some of the repair processes undertaken by our workshop require spraying polyurethane paints in their final stages. Spray painting with polyurethanes can release a fine mist of chemicals into the atmosphere and is best done in a spray booth. The Marina has undertaken to limit the amount of spraying these paints to 200mls per day. It is estimated that the annual use is less than 5 litres. New roller and brush tipping paints are coming to the market that can be safely used outside a spray booth and our staff are becoming practiced in their usage.

vii. Machinery Noise

The Marina staff use hand held power tools, an air compressor and a jetblaster. These tools are inspected regularly for wear and excessive noise. Normal usage is not considered a problem because of the considerable distance to the nearest residence.

viii. Sump Oil

Sump oil is generated when boat motors are serviced. This work is either carried out by the boat owner, the Marina preferred contractor or an outside contractor. The Marina does not provide any sump oil storage or disposal. The signed agreement Davis Marina has with its preferred contractors provides for the proper disposal of sump oil by the contractor. Marina clients and outside contractors are informed through the catalogue and web site about the proper procedures for disposing of waste oil.

ix. Pump Out

All recently built craft are required to be fitted with holding tanks and commercial marinas are required to provide pump out facilities. Our Marina has a mobile pump out facility that consists of a tank and a pump that can be temporarily fitted to *Runaround*. The client's boat would be pumped out and taken to the nearest land base facility where the mobile facility would be discharged.

x. Litter

Litter occurs on all private and public sites. Litter is controlled by the provision of waste and recycling bins. Signage information is included in the catalogue and web page. Marina staff are encouraged remove litter including water borne litter in the normal course of their duties.

xi. Environmental Emergencies

Chemical or Paint Spill in Workshop

Should there be a spill in the bunded area the appropriate action should be taken to mop up the spill and dispose of properly. Should the spill occur outside the bunded area then it may be appropriate to deploy the spill kit.

Fuel Spill

In the unlikely event of a fuel spill the boom and absorbent material should be deployed from the spill kit.

Paint Flakes & Dust Shavings

The boom and absorbent material should be deployed from the spill kit.

Reporting Adverse Events

Adverse environmental events should be reported to the Environmental Protection Authority and logged in the marina environmental record book.

xii. Rubbish and Recycling

General

The Marina has the responsibility to dispose of rubbish generated by:

1. Clients on their boats (not from their homes or work)
2. The Marina which produces the following waste:

a. Industrial from our workshop
b. Paper from our office
c. Bottles and cans from our clients
d. Food waste from our clients

In addition the marina staff have a responsibility under environmental legislation to practice recycling wherever possible and to make it available to our clients.

The Marina has the following rubbish facilities:

1. 1 only skip bin (1.3 cubic metres) for mixed rubbish
2. 2 only 200 litre paper recycle bins
3. 2 only 200 litre bottle and can recycle bins
4. 2 only 200 litre mixed rubbish bins
5. Bins are also located on the East and West Marina arms

Management
The following marina staff will be Waste Supervisors. The first person on the list will assume the daily duty. If they are not able to do the job the next person on the list will become the supervisor.
Weekdays:

1. Peter Muller
2. Bruce Davis
3. Peter McDonald

Weekends:

1. Tender Driver
2. Manager

The Supervisors will control the use of the bins. Marina staff will practice recycling of bottles and paper and will encourage our clients to do like wise. It should be noted that all NSW citizens have a responsibility to recycle. The Marina encourages its clients to recycle but does not have the resources to enforce recycling. In effect the clients have a choice of recycling or using the mixed bin.

Emptying
The Waste Supervisor will monitor the bin usage and arrange regular emptying as they determine appropriate. The Secretary or the Waste Manager may arrange a special collection by calling Manly Council Waste department on 8966 3860. The 200L bins should be wheeled onto the roadway near the mixed skip on the evening they prior to collection and returned the next day.

Unauthorised Use
Where there is reasonably good evidence of unauthorised use of the bin the matter can be referred to the Manly Council Rangers.

Contamination of Recycle Bins
Contamination of recycle bins may occur. An example would be when garbage is left in the bottle and can bin. The supervisor may remove small amounts of contaminants (gloves may be needed). If the contamination is larger the entire bin may be emptied into the mixed bin. Supervisors should practice a polite education program directed at our clients to prevent contamination.

Location

1. The mixed skip is to be stored on the paving stones below the toilet block
2. One 200 litre mixed and one 200 litre bottle and can will be stored on the East Marina
3. The remaining 200 litre bins are to be stored near the ice box

Locking
The 200 litre paper bin and the skip will be locked at all times

Banned Substances
The Supervisors will conduct spot checks on rubbish deposited in the bins by clients. This should be done in a polite manner as possible to ensure banned substances are not placed in our bins.

The following banned substances should be disposed of elsewhere:

1. Petrol
2. Diesel
3. Oil
4. Thinners (liquids)
5. Paints
6. Batteries

It should be noted that small amounts of these liquid substances absorbed in sawdust or similar are not considered to be banned substances.

xiii. Environmental Performance
The environmental performance of the staff and their work practices is constantly monitored. Weekly visual inspections of the recycling bins and paint and chemical storage ensure satisfactory compliance. Water and electricity bills are compared quarterly to help identify any inefficiency.

The ambience at Davis Marina is generated by the waterfront activity of the Marina itself, the backdrop of Wellings Reserve and the presence of the Manly Scenic Walkway. Therefore the Marina has a vested interest in safeguarding its immediate surroundings by being environmentally responsible.