



SOUTH *of* PERTH YACHT CLUB

**Boat Repair and Maintenance
Preferred Procedures Manual**

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Boat Repair and Maintenance Preferred Procedures Manual

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Mandatory Contractor's Insurance/OH&S Requirement

All contractors engaged to perform maintenance by the Club or Members within SoPYC premises must supply a Certificate of Currency annually to the office demonstrating they are insured for a minimum of \$10m Public Liability Insurance.

Self employed contractors must be able to demonstrate their competence to carry out the work they are engaged to perform. Companies with employed staff or subcontracted personnel will be deemed to have satisfied themselves their staff and subcontractors are competent.

Failure to demonstrate appropriate competencies upon request or supply requisite documents may prevent the contractor from commencing work until such time as they can fulfill the requirements of SoPYC.

Contractors should advise the office they are working on the premises must wear badges or appropriate work clothes identifying themselves and their status as contractors/visitors

Whilst working or present on the Club's grounds and marina precinct all members and contractors agree to abide by the rules, policies and guidelines issued by SoPYC in the interest of responsible environmental and safe work practices and agree to comply with the lawful directives of staff and Responsible members as delegated from time-to-time by the Club's Management Committee.

Filling Fuel Tanks

- Fuelling is only permitted at the Club fuelling berth. Closed containers of fuel may be taken off or on board but transference from one container, or tank, to another is forbidden within the Club grounds, on any Club jetty or wharf, or in a craft in the Marina.
- Before taking on fuel, all openings shall be shut, all appliances, engines and motors turned off - including automatic bilge pumps and pilot flames and burners of gas units. All batteries to be isolated from the electrical system.
- All crew and other personnel not directly required to assist with the fuelling must be ashore and only re-embark after the engine has been started.
- Locking filler nozzle handles preventing or slowing automatic switch-off is prohibited. Such actions will result in significant spills and pollution and necessitate a higher level of response by members, staff and emergency authorities.
- Smoking is not permitted while refueling. Cigarette butts shall be extinguished and retained on board for disposal with rubbish and not thrown overboard.
- Petrol, oil, or other flammable liquids, chemicals, refuse or waste such as paper or rags contaminated with similar combustibles or pollutants shall not be discharged or thrown into the waters in the marina, on jetty decks or upon the ground within the precincts of the Club.
- Bilge's shall be clean and free of oil and fuel and be adequately vented. Appropriate absorption material must be placed in the bilges and/or under engines and placed in such a way as to trap oil and fuel before it reaches bilge pump outlets.
- In the event of a spill or internal overflow, call for assistance and use the absorbent pads located in spill kits or kept aboard the vessel to mop up the fuel. Seek assistance.
- **Do Not attempt to pump spilt fuel from the vessel.** Switching on electrical systems/bilge pumps may create a flashpoint leading to serious injury and/or destruction of property.
- No engine fuel shall be stored except that contained in the vessel's normal tanks, used when underway.
- Fuel shall only be carried in the Club grounds or mooring areas in containers approved for that purpose.
- No vessel shall be left unattended with its engine running while in the boat harbour or alongside any Club jetty or wharf.

Boat washing

The following measures should be undertaken to prevent pollutants from discharging into the marine environment from the cleaning of boats and motors, engines or mechanical equipment:

- Oil, fuel and dirt should be wiped from the engine as much as possible before cleaning
- Outboard motors should be washed and rinsed in a work area where the run-off drains to a pit/petrol interceptor and the wastewater can be properly treated or disposed of.
- Where possible, boat decks should be rinsed with water only.
- It is recommended that environmentally sensitive detergents only (e.g. low phosphate, biodegradable) are used.
- Boats with antifouling material applied to the hull may only be washed down in the designated area on the slipway.

Surface preparation and cleaning

Removal of antifouling paint

Antifouling coatings are applied with the aim of either inhibiting the settlement or the attachment of marine biota to vessel hulls. Marine biota settlement is inhibited through the application of paints containing toxic chemicals, such as or copper (application of tributyltin (TBT) and Irgarol is banned on recreational vessels), which are leached into the water column. Inhibiting the attachment of marine biota is achieved by coating vessel hulls with silicon or other chemicals containing non-stick surface bound properties. Conventional antifouling paints contain biocides that are harmful to marine life. The removal of antifouling paints results in paint debris, sludge, dust and other particles that may contribute towards water, soil and/or air pollution in the absence of appropriate environmental management measures.

The following recommendations apply to the general removal of antifouling paint.

- Paint removal activities should always take place over fully covered surfaces above the tidal zone to ensure that the paint residues are collected and disposed of properly and are not washed into the water. Where the work area is not sealed, paint removal activities should not take place within 50m of the shoreline and tarpaulins must be placed on the ground to ensure that all of the removed paint debris, sludge, dust and other residues are contained, collected and disposed of properly.
- It should be assumed that any removed antifouling coating:
 - is contaminated with biocides
 - may contain TBT or lead based compounds
 - vessels constructed before the 1970s may possibly comprise a variety of hazardous chemicals including arsenic, mercury and DichloroDiphenylTrichlorethane (DDT)

Therefore, antifouling coating should be removed within a controlled environment and within areas that have equipment for collection of potentially contaminated wastes.

- Before removing antifouling paint, it is recommended that the person should be aware of the formulation and type of antifouling paint to be removed, as the paint wastes may be considered hazardous. If uncertain about the formulation and type of the paint wastes, it is recommended that you dispose of paint wastes in accordance with the Australian Standards and the products "safety sheet" provided by the manufacturer.
- Antifouling coatings should not be burnt off as this may generate highly toxic emissions.

Removal of biological hull foulants and marine biota

Marine pests are often present on the hull of vessels and when marine biota is removed can result in odours. There may be a water quality impact if disposed of in the marine environment. Measures should be implemented to contain and dispose of biological material removed from vessels if undertaken on the slipway. Vessel hulls should not be cleaned within the tidal area if covering material is not prepared. Solids should be disposed of in the bins provided.

Manual and mechanical scraping, scrubbing and cleaning

Hull and deck sanding and scraping produces a range of solid wastes, including paint chips, dust and other hull and deck sweepings. Pollution prevention and control measures should be adopted to avoid the release of contaminants into marine waters, bottom sediments, soil and air.

Sanding and scraping:

- Hand sanding only is permitted on boats in pens
- Mechanical buffing, scraping and manual scraping methods are recommended over pressure water blasting for hull cleaning as they allow the solid wastes to be swept or vacuumed up for disposal.
- Sanders, grinders and other power tools should be fitted with dust extraction and collection systems.
- Tarpaulins or rigid sheeting should be placed under the boat area being scraped or sanded to catch the paint scrapings and dust.
- Work area should be vacuumed or swept regularly. Be aware of weather and tidal conditions to avoid waste dispersal by wind, rain, water runoff or tidal action.
- When hull repair and maintenance works are completed, the work areas must be cleaned up by the owner or contractor and wastes should be stored and disposed of in accordance with the club rules. If SoPYC staff are required to tidy/clean up after contractors or members a fee may be charged.

Scrubbing and using chemical cleaners:

- Detergents, degreasers, strong acid or alkaline cleaning agents can be toxic to marine life, so chemicals should only be used for severe staining that cannot be removed by water or biological sensitive cleaners.
- Chemicals should not be used where they can directly enter the water. Wherever possible, rags or a brush should be used instead.
- Corrosion and rust removers are strong acids and should follow manufacturers' recommended instructions before use. Refer to manufacturers data sheets.
- Use of degreasers should be avoided as emulsified oils are harder to trap and treat.
- It is recommended that:
 - water-based or biodegradable strippers, cleaners and degreasers are used;
 - phosphate free detergents are used wherever possible and scrubbed with a soft brush to absorb the detergent;
 - biodegradable spray-type cleaners that do not require rinsing are used.

Pressure water blasting

The use of water-based pressure cleaners to clean the exterior of boats has the potential to cause environmental harm. High-pressure water blasting also presents containment problems caused by the wide dispersion of biological and physical materials removed from the vessel hull during the cleaning process.

Pollutants and contaminants originating from pressure water blasting activities include:

- Chemicals and additives, including detergents, solvents, caustic or acids, used in the cleaning solution;
- Materials removed from the cleaning surface including biological hull foulants, antifouling paint sludge, dirt, oil and grease; and
- Compounds produced as a result of reactions between the cleaning solution and the materials removed from the boats.

It is therefore important to prevent pollutants originating from pressure water blasting activities from entering the environment to the maximum extent practicable.

- Before commencing with pressure water blasting activities, the work surface should be clean (i.e. free from loose material) and that all solids should be swept up and binned.
- Moveable waterproof screens should be located alongside and behind the people operating the hull water blasting to prevent spray drift from escaping from the work area and settling on freshly completed work on vessels or motor vehicles in the car park.
- Pressure water blasting operations should be avoided during windy conditions.
- High temperature water rather than chemicals should be used for cleaning activities.

In-water hull cleaning

Many of the products used to clean boat hulls and decks contain toxic ingredients such as chlorine, phosphates and ammonia. Scrubbing hulls coated in antifouling paints releases toxic metals, which may contaminate the water and bottom sediments. In-water hull cleaning may also result in the introduction of exotic marine organisms (pests/predators of indigenous local species) attached to the hull. Therefore, cleaning methods should prevent or contain the release of pollutants to marine waters and sediments as much as practicable to avoid environmental impacts.

Surface coating

Manual painting

Painting vessel hulls and applying topside coatings may result in the concentrated release of harmful vapors and liquids. Wastes generated by painting activities are considered hazardous where they contain solvents and/or heavy metals. The following is suggested to reduce the potential for paint products, including the release of harmful vapors, from entering the environment.

- Hand painting only is permitted on boats in pens
- Manual painting, using brushes and rollers, is recommended over spray painting methods.
- The application of TBT or Irgarol is banned. This ban applies from 1991 in WA. Note the attached policy on use of TBT. The ANZECC Code of Practice for Antifouling and In-Water Hull Cleaning and Maintenance is available from the Club office.
- Before applying antifouling paints, consideration should be given on using alternative technologies, particularly those that rely on the coating's physical properties rather than its toxicity to prevent fouling.
- Mix or preparation of antifouling paints on sites should be avoided when the sites are subject to tidal influences. Paints should be mixed in drip trays under cover and in a sealed, bunded and well ventilated area.
- Tarpaulins/drop sheets should be spread under the entire boat work area to collect wastes and prevent paint drips and spills from entering the marine/land environment.
- Spilt paint (particularly water-based paint) should be cleaned and the remaining paint should be allowed to dry rather than washing it into the wastewater collection system.
- When cleaning up after painting, it is suggested to wipe/squeeze as much paint as possible from the brushes, trays and rollers back into the paint tin for future use.
- Excess paint should be painted out onto an absorbent material such as an old rag or newspaper, and it should be allowed to dry before disposal.
- When using containers filled with water to clean water based paint from brushes and rollers, the paint solids should be allowed to settle by leaving the container overnight. In the morning, water should be poured out onto the collection facility and the solids from the bucket should be wiped out by an old rag or newspaper.
- Empty paint and thinner containers should be allowed to air-dry before disposal.
- All paint waste, particularly antifouling paint waste, should be disposed by a licensed chemical waste collector.

Spray painting

The environmental risks associated with spray painting include the release of volatile organic compounds (VOCs) and fine particles from overspray into the atmosphere. Therefore the following practices are recommended:

- All spray painting must be approved by the General Manager or his delegate. Persons performing this work must demonstrate competence prior to commencing. Major spray painting is permitted only on the slipway when vessels are adequately screened. Minor spraying may be permitted by competent contractors on boats in pens that are appropriately screened and using “artist/signwriter” airbrush tools.
- Prior to consent be granted to carry out the work, a plan is to be submitted to the General Manager describing how the work will be carried out and the safeguards employed to prevent contamination, overspray and spills including how a spill or accidental discharge will be managed.
- When spray painting large objects, the work must be conducted on a sealed and bunded surface that is either fully enclosed (sides and top) with screening material or fully screened (sides only) to a height two metres above the structure.
- Spray painting must not be performed in high winds.
- Emissions can be reduced by keeping spray guns and lines clean and well maintained, keeping guns perpendicular to the surface being sprayed and maintaining a uniform distance from the surface.
- Efficient spray equipment (transfer efficiency >65%) such as high volume low pressure (HVLP) spray guns should be used for all outdoor/open-air spraying.
- Corrosion inhibitors commonly contain zinc that can contaminate marine waters and land. It is suggested to use corrosion inhibitors that are compatible with surface coating requirements, biodegradable and free from chromates, nitrates and nitrites.

Spray painting waste management:

- A wash station should be used for cleaning spray equipment and the paint cup should be scraped free of any residual paint with a spatula before cleaning the equipment with solvent. Wastewater from the cleaning of spray equipment should not discharge to the interceptor, storm-water system, land or river.
- All paint residues, waste paints, thinners and solvents should be cleaned up and collected in a sealed container or for disposal by a licensed chemical waste collector.
- Water contaminated with paint debris should be directed to a settling tank where the particulate matter can settle out.

Grit Blasting

Grit blasting is not permitted by SoPYC.

Fibreglassing

Fibreglassing activities are a source of hazardous volatile emissions to the environment. Acetone (a solvent used to clean tools and other surfaces contaminated with resin) and styrene (the volatile component of the polyester resin) are the largest contributors of volatile emissions caused by fibreglassing activities. Fibreglass trimming, grinding, sanding and drilling activities may also give rise to air pollution in the form of dust and other particulate emissions.

The following is suggested to protect air quality and minimise volatile solvent and particulate emissions, and to protect water quality and prevent landfill contamination by ensuring proper disposal of hazardous wastes.

Spray lay-up and surface finishing:

- All spray emissions should be contained and controlled. Recommended methods include working in a shed or enclosed area with ventilation.
- Where practical, hand lay-up methods are recommended over spray gun applications as hand lay-up releases less styrene.
- For spraying, airless, air-assisted airless, or HVLP spray guns should be used. Internal mix, airless spray guns result in lower styrene emissions than other types of spray guns.
- The spray lay-up equipment should be properly maintained and periodically cleaned. This will avoid glass jamming in the spray gun chopper mechanism and the generation of additional waste (resin and glass) when fixing it.
- A gun wash station or similar must be used for the cleaning of spraying equipment.
- Methyl Ethyl Ketone Peroxide is often used as a catalyst and should not be stored anywhere near flammable liquids or other dangerous goods.
- The amount of grinding and sanding should be reduced as much as possible by trimming with a knife or mechanical cutter when articles have solidified but not yet hardened.
- Surface finishing (sanding and washdown) should not be done in areas where the resultant waste (fine dust particles) may contaminate soil, storm-water or the marine surface waters.

Fibreglassing waste management:

- All sanding and grinding dusts must be securely wrapped prior to disposal.
- All contaminated and spent solvents used to clean equipment must be collected in a sealed drum or container for disposal by a licensed chemical waste collector.
- Under-cured resin material, from the cleaning tanks, should be hardened by adding an appropriate amount of catalyst prior to disposal.

Welding and metal fabrication

Welding activities may contribute towards air pollution and cause metal contamination of soil, storm-water and marine waters through the generation of airborne dusts and the emission of fumes and smoke. Pollution prevention measures should be adopted and the following is suggested:

- Welding and thermal cutting activities should be conducted in a well ventilated area.
- All metal cutting operations should be conducted on a sealed surface inside a screened area to minimise the horizontal dispersion of metal fragments and allow the sweeping up or vacuuming of metal scraps and filings.
- Use of oxy-acetylene torches should be kept away from possible ignition sources such as oils, grease and rubber to avoid accidental combustion and the generation of dangerous fumes and smoke.
- Dust and grinding wastes should not be accumulated where they may cause a nuisance to neighbours or be washed into storm-water drains or the receiving marine environment.
- All dusts and other grinding wastes should be securely wrapped prior to disposal and filings should be swept or vacuumed.
- Hot Work practices should be adopted for all welding jobs, i.e. two people present, fire extinguishers nearby.

Engine maintenance and repair

Engine maintenance and repair activities can cause human hazards, result in spills and leaks that are costly to clean up, degrade water quality and threaten aquatic plant and animal life.

The following measures are recommended to prevent or minimise the adverse environmental impacts associated with engine service and repair activities.

General engine maintenance:

- Absorption materials must be placed in bilge/under motors to trap oil/fuel leaks, particularly in vessels with automatic bilge pumps.
- Engines should be maintained regularly to prevent oil and fuel leaks to the bilge.
- A drip tray or groundsheet should be used under the engine to collect oil, grease, solvents or detergents.
- When cleaning the drip tray or groundsheet, methods that do not result in water or soil contamination should be used.
- Adequate supplies of absorbent materials and other rags should be kept for cleaning up small fuel spills.

Cleaning engine parts:

- Parts cleaning and degreasing should take place in a properly designated wash bath or over catch pans located in a covered, sealed and bunded area that is graded to a collection pit or sump.
- Where possible, engine parts should be cleaned with a brush rather than with solvents or aqueous degreasers such as alkaline or caustic soda.
- Water-based or biodegradable strippers, cleaners or degreasers should be used wherever possible.

Replacing engine parts and oils:

- Old or damaged batteries which are intended for recycling should be deposited in trays located under cover in the slipway area.
- Mercury switches, thermostats and fluorescent tubes should be collected and packaged for disposal by a licensed chemical waste collector.
- A funnel should be used when pouring fuel into drums or tanks and hand pumps should be used to remove fuel from drums rather than decanting them.
- Bilge water should not be pumped into a waterway or onto soil if it contains high concentrations of hydrocarbons or other wastes including sanitary and detergent wastes.
- All waste grease, sump oil, contaminated bilge water and waste oil filters should be collected for recycling or disposal by a licensed chemical waste collector.

SAFE WORK METHOD STATEMENT FORM - page 2

Personal Protective Equipment required (tick the appropriate box)

- | | | | |
|---|--|--|---------------------------------|
| <input type="checkbox"/> Gloves | <input type="checkbox"/> Protective clothing | <input type="checkbox"/> Hearing protection | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Safety glasses / goggles | <input type="checkbox"/> Safety footwear | <input type="checkbox"/> First Aid kit | |
| <input type="checkbox"/> Face shield | <input type="checkbox"/> Respirator | <input type="checkbox"/> safety harness and strong point | |

Environmental & Safety precautions that must be taken when appropriate (follow Best Management Practice)

- | | |
|---|--|
| <input type="checkbox"/> disconnect power supply (12V, 24V and/or 240V) and tag "do not operate" for the duration of your service | <input type="checkbox"/> ensure residual current devices are fitted to each power outlet, check functionality of RCD's |
| <input type="checkbox"/> place oil absorbing pads in bilge area | <input type="checkbox"/> have a basic oil spill / recovery kit within reach |
| <input type="checkbox"/> keep all chemicals in spill proof containers | <input type="checkbox"/> observe strict NO SMOKING |
| <input type="checkbox"/> use dust extraction systems | <input type="checkbox"/> have fire fight equipment within reach |
| <input type="checkbox"/> place oil spill booms around the vessel | <input type="checkbox"/> check for trip or slip hazards |
| <input type="checkbox"/> place (floating) mats underneath work area to collect shavings / dust | <input type="checkbox"/> ensure adequate ventilation when working in confined spaces |

Completed by (print name):

Signature:

SOUTH of PERTH YACHT CLUB

OIL AND HAZARDOUS MATERIALS INCIDENT REPORT FORM

1. Date and Time of Discharge
2. Location of Discharge:
(See Map overleaf)
3. Cause of discharge
4. Steps taken to stop discharge
5. Materials used to clean up/absorb/ contain the spill
6. Type and volume of substance discharged/
contained/cleaned up
7. Rating: Minor Moderate Significant Extreme
8. Description of discharge Released to water Released to soil Damage to Flora/Fauna
Disturbance to Neighbours Other Please specify:
9. Person/Vessel/Activity responsible for discharge
10. Contact details of person/vessel responsible for discharge (if known) or witness(s)
11. Was discharge reported Yes No

If Yes to whom
GM
Bosun
Other Who: _____

Date Reported: ___/___/___

If external Authority, name and contact details:
(i.e. SRT, EPA, Fire Brigade)

If no, explain why not reported

12. Were there injuries?

No

Yes Describe injury

Medical Action Required
(i.e. Ambulance, taken to Doctor)

13. Have containment materials been replaced/reordered?

Yes

Date

No

By

14. Steps taken to prevent recurrence of incident/discharge:

15. Other information which may assist:

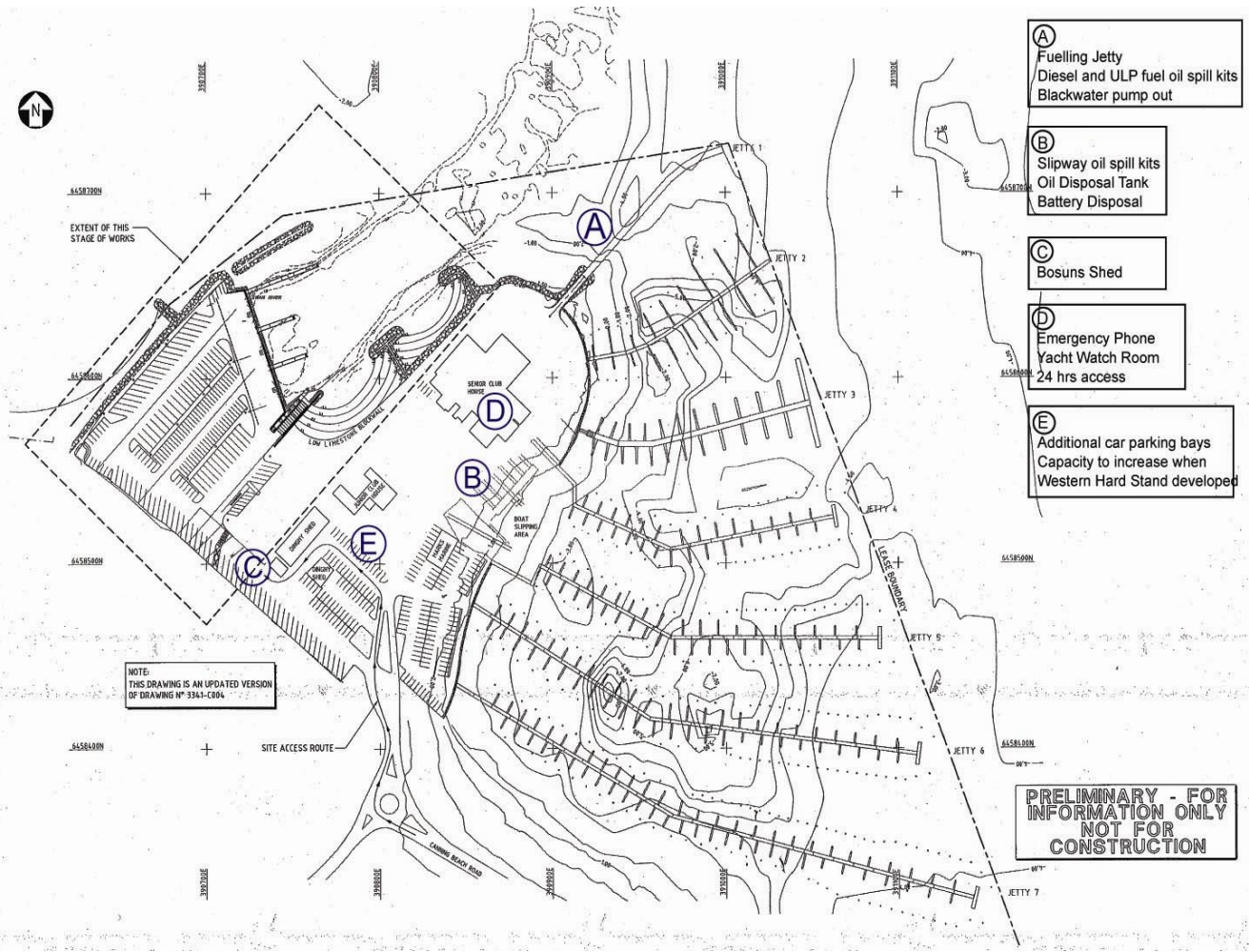
Name

Signature

Title

Date

Contact Details



A
 Fuelling Jetty
 Diesel and ULP fuel oil spill kits
 Blackwater pump out

B
 Slipway oil spill kits
 Oil Disposal Tank
 Battery Disposal

C
 Bosuns Shed

D
 Emergency Phone
 Yacht Watch Room
 24 hrs access

E
 Additional car parking bays
 Capacity to increase when
 Western Hard Stand developed

NOTE:
 THIS DRAWING IS AN UPDATED VERSION
 OF DRAWING N° 3341-C004

**PRELIMINARY - FOR
 INFORMATION ONLY
 NOT FOR
 CONSTRUCTION**