1. INTRODUCTION

1.1 Forward

These Instructions are designed to assist a trained Pool Operator with the correct operation and maintenance of the filtration and pool water treatment plants that have been installed at the Darwin City Waterfront by Trisley's Hydraulic Services. These Instructions relate to the plant nominated on the Title Page and are the property of the Darwin City Council. These Instructions shall not be reproduced or used for any purpose other than originally intended without written permission of the Darwin City Council.

The Pool Operator is required to be familiar with all Instructions contained herein and to maintain this Instruction Book for immediate reference. The Manual shall not be removed from the pool premises. This Manual is not intended to be a training guide.

If the Pool Operator requires information on more fundamental aspects of operating a commercial swimming pool (eg. water testing, staff duties, legal responsibilities, emergency care, disease transmission, etc.,) the ARI Reference Handbook is recommended as a further source of information. Rather than provide specific instruction as to how to use a test kit, how to turn a valve, or when to turn an appliance on or off, these Instructions are designed to provide an overall perspective that will enable a trained Operator to properly manage the system.

Although some elements of the filtration and water treatment plant(s) are automatic, this does not imply that they will operate to their full potential without operator involvement.

This manual provides information on the filtration and chemical dosing plants only. All information (operation, maintenance, service etc) for the Wave Generation equipment is supplied in its own manual.

1.2 How to use this Manual & who does what

This Procedures Manual contains the information for a trained Pool Operator to operate and manage the various pool water treatment plants installed at the Darwin City Waterfront. It should be understood that no amount of written word could ever provide the same confidence and knowledge that can be acquired by physically operating the plant. If during the first twelve months of operation. the Operator is in any doubt, his first reference must be to Trisley's Hydraulic Services. If adjustments or revisions are considered necessary, such changes shall be approved and documented by Trisley's to be part of the project's overall Operating Instructions.

This Manual is presented in two Parts:-

Part A	Procedures Manual
Part B	Manufacturers Literature, Project Drawings, Commissioning data, Asset Register

This Procedures Manual should be read in conjunction with the results that were established during the testing and the commissioning process. The information is provided within **Part B** and provides the Operator with equipment settings that will provide the best operating results. Although the main requirement of the Pool Operator is to operate and maintain the plant in safe and efficient condition, much of this work is confined to filter backwashing, monitoring the plant controls and checking the resultant water quality. Many of the equipment settings that are established during the system's commissioning process should not be varied without the written permission of Trisley's Hydraulic Services. Again, if in doubt, the Operator should seek advice from Trisley's before making any changes.

Apart from Trisley's obligation to satisfy specific performance guarantees, they are also required to correct any defects that may become apparent during the first twelve months operation. All of the plant and equipment supplied under this Contract is subject to a standard manufacturer's limited warranty. These warranties do not allow for mis-use, abuse, failure to follow Instructions, water damage, negligence, and or accident. During the first twelve months operation Trisley's are required to provide any in-field service that may be required in order to obtain legitimate warranty replacements. **Part B** provides specific details on manufactured product.

Whilst the Pool Operator may elect to undertake some of the basic maintenance that is required to keep the plant in peak operating condition, there are items of plant that require servicing by qualified/authorized technicians. At the expiry of the defects liability period, Trisley's Hydraulic Services Pty Ltd are also prepared to offer an ongoing Maintenance Agreement through our local service agent.

1.3 Notice Regarding Guarantee

The Guarantee provided by Trisley's Hydraulic Services Pty Ltd is contingent upon all Instructions being followed implicitly. This includes the Instruction and advice provided by Trisley's staff during various training sessions.

All manufacturers and suppliers of component equipment have had formal arrangements with Trisley's to provide this project with products and services that are safe to operate and are capable of providing agreed duties. Refer to **Section 8.0** for further details on service, warranty and maintenance.

This project's primary objective has been to provide a complete pool water treatment plant that is capable of providing reliable performance and acceptable water quality. The acceptance criteria and the performance guarantees relating to Trisley's scope of works have been outlined within Instructions provided by Sitzler Pty Ltd. These Instructions were subject to a design that was provided by Geoff Ninnes Fong & Partners Pty Ltd.

The Pool Operators have a responsibility to thoroughly comprehend all aspects of the plant's operation. Throughout the defects liability period Trisley's has an equal responsibility to provide all instruction and advice that is required of them. The Pool Operator has the added responsibility to train any new staff that may be required to operate or maintain the plant. Whilst every attempt has been made to safeguard the equipment provided under this Contract, considerable risk and damage can occur if unauthorised plant access is afforded to inexperienced personnel. Access to the pool plant rooms should be controlled restricted to authorised and trained staff only.

2. THE BASICS

2.1 INTRODUCTION TO HEALTH & SAFETY

Maintaining a safe swimming pool environment involves three major responsibilities:-

- Patrons must be required to conduct themselves in such a manner as to avoid causing personal injury;
- To the best level that is possible, dirt and infective materials must be prevented from entering the pool;
- Dirt and infective material, which does enter the pool must be quickly removed and rendered harmless.

The first of these responsibilities has primarily to do with public safety as distinguished from public health. It relates to the physical conduct and deportment of individuals while at work or play within the pool areas. The disciplines for governing such behaviour have been widely studied and are taught to lifeguards and safety personnel. Since this knowledge is readily obtainable from many sources, this aspect of pool operation is expressly omitted from this Manual.

The second responsibility, like the first, involves the control of bathers. This discipline bears heavily upon the cleanliness of the bathers, the hygienic environment of the pool, and the degree of "management" imposed by the Operator.

The third responsibility involves technical knowledge, special equipment and procedures that embrace the whole science of pool sanitation and disease prevention.

To competently handle all situations, the Operator must develop a knowledge of the chemistry of swimming pool water, the mechanics of filtration, chemical feeding, and the hydraulics of the pool recirculation system.

2.2 FUNDAMENTAL CONSIDERATIONS

2.2.1 Pool Contamination

Quite often the treatment of swimming pools poses many more complex problems than those associated with drinking water. Pool sanitation in general (and water disinfection in particular) begins with bather supervision and discipline. For the most part, the rules governing good conduct