

In-situ Reprovisioning of Sha Tin Water Treatment Works – South Works – Advance Works and Main Works

Dialogue (Apartment scene)

Hi! Dad

Hi! How's it going?

Very well!

Your grandson is just like you. He loves taking photo and keeping fish. He asked me to buy him fish again!

Perhaps you should replace the filters.

Really? A replacement simply because of a couple of fishes?

Well, water is the source of life for fish, as well as people. To keep water clean, filters need to be regularly maintained and replaced.

Reminiscences of your work again, dad!

Grandpa, can you tell me more about your work in the water treatment works?

Sure, but do you fancy visiting the treatment works instead?

Hurray! That's cool!

Dialogue (Entrance of Sha Tin Water Treatment Works)

Hello everyone! My name is Cathy from the Water Supplies Department. I am your guide for today's visit. Welcome to the Sha Tin Water Treatment Works. Has anyone been here before?

My grandpa had always been here!

Luk was here everyday in the past.

That's true. I am sure Uncle Luk had already told you lots of things about water treatment works, as he was our former staff. Well, today's visit is a bit different. Apart from knowing the operation of the water treatment works, I'd like to introduce an upcoming project to you. Shall we start now?

Sure.

VO#1

The Sha Tin Water Treatment Works was commissioned in 1964. The then treatment works has become the South Works nowadays.

The North Works also started serving the public since its commissioning in 1983.

It supplies about 30 per cent of drinking water in Hong Kong, including most parts of Sha Tin, Kowloon and Hong Kong Island. It is the largest water treatment works in Hong Kong, with an output up to 1,060,000 cubic metres per day.

Prosperity and continuous population growth have led to an increasing demand on water supplies. In addition, the South Works has been

operated for nearly 50 years whilst substantial technology advancement has taken place. Therefore, the South Works will have to be reprovided in situ to increase the capacity and enhance the quality of water supplies.

Dialogue (Outdoor at Sha Tin Water Treatment Works)

During the construction of the South Works, the North Works will still be in operation as usual. And in conjunction with the upgraded Tai Po Water Treatment Works, the reliability of water supplies to the public will not be affected.

VO#2

In the design stage of the project, the Water Supplies Department has taken into account different technical considerations, site constraints, design concepts as well as environmental impacts of the project.

We also conducted assessments and consultations on key issues by a number of technical visits and workshops. For example, visiting overseas water treatment works where state-of-the-art treatment technologies and operations were evaluated, and served as design references for the project.

Moreover, a value management workshop was conducted collectively with all relevant stakeholders, to identify the fundamental issues, and work on design concepts and schemes to formulate appropriate solutions and follow-up actions.

Further to that, a discussion workshop was set up for reporting the latest development of the project to the Sha Tin district councilors and relevant committee members. This enabled district councilors, committee members and people living nearby to appreciate details of the project and its benefits, and also to exchange views in the early stage for design enhancement.

We also keep close liaison with other projects in the vicinity to resolve interfacing issues during the implementation to ensure satisfactory completion of the project.

Dialogue (Control Room at Sha Tin Water Treatment Works)

Welcome to the control room in the administration building. Here is mainly for the monitoring and control of the operation of the treatment works. The reprovisioning project will give a facelift to the South Works in meeting the ever-increasingly stringent standards on drinking water quality.

Under the design concept of “Natural and Sustainable”, state-of-the-art facilities will be built under the project, including -

VO#3

The administration building which houses the laboratories and visitors' reception facilities.

Other common facilities such as alum saturation tanks, water treatment works logistics centre, associated water pumping station and ancillary facilities.

The landscape design of the administration building will blend into the natural environment and topography. The building will also enhance the working environment, visitors' reception facilities as well as connectivity between various functions. During the visit, the public can find out more information delivered by the Water Supplies Department apart from that about the Sha Tin Water Treatment Works.

The Mainland East Laboratory and the control room will be located in the administration building to control and monitor the operation of the treatment works and its supporting facilities.

Dialogue (Outdoor at Sha Tin Water Treatment Works)

After in-situ reprovisioning of the South Works, the output of the Sha Tin Water Treatment Works will not be reduced. On the contrary, the water treatment capability will be further enhanced.

VO#4

Under the project, we will incorporate advanced technologies in the water treatment process.

First of all, when raw water is transferred to the treatment works, ozone is added to oxidize soluble manganese to suspended particles similar to other fine particles in raw water.

Coagulants are then added together with continuous stirring of the water.

After mixing, the suspended particles flock to form larger particles and then settle in the sedimentation tanks installed with high rate lamella plates settlers. The settled particles are separately handled in the sludge treatment unit.

After that, ozone is added to the water again for the decomposition of organic matters in raw water. The next treatment process is deep bed biological filters

and deep bed dual media filters for removal of ammoniacal nitrogen and other natural organic matters.

Filtered water is then irradiated by ultraviolet light to inactivate bacteria, pathogens and parasites that would remain in water.

Chlorine is then added for final disinfection to keep the water free from bacterial infection during the delivery to customers.

Finally, lime and fluoride are added to filtered water for pH adjustment and tooth protection.

The treated water is stored in service reservoirs before supplying to customers via the distribution water mains.

Dialogue (Outdoor at Sha Tin Water Treatment Works)

Apparently, the proposed treatment process is very different from the current one. Do you conduct pilot testing on the proposed treatment process?

Seems that Uncle Luk still remembers our current way of treating raw water. For sure, we conduct pilot testing for the process design before implementation.

Let's look at the clarity of water in various stages of the treatment process. The water from the last faucet is ready for consumption. Anybody want to try?

Well, the water is yet to be boiled?

Actually, boiling tap water addresses the common concern on the cleanliness in the aged plumbing inside a building, such as water supply pipes and storage tanks lacking of regular inspection and maintenance.

That's why, as a precautionary measure, water is at times boiled before drinking. The water here in the treatment works is wholesome and free from these problems.

I'd love to try!

Dialogue (Kowloon Reception Reservoir)

Look at this, Grandpa!

An excellent shot. All right, let's head back.

VO#5

In response to future population growth and the fact that part of the Sha Tin Water Treatment Works has been in operation for nearly 50 years, we have to reprovide in situ the South Works to ensure reliable drinking water supplies to the public can be maintained in future.

During construction of the new South Works, the North Works will be operated as usual without compromising water supply services to the public.

Although the project programme would be relatively short and so would be the inconvenience caused during construction, the project value will be long-lasting. We will strive for serving the community with reliable water supplies for the present and future generations.