Kings Pond - Health and Safety : some specific issues.

Whilst any contractor will be required to complete a formal Health and Safety Risk Assessment the Town Council, as site owners, would wish to see any such assessment include the following matters:

Physical:

- Maintained continuous access for the occupiers of the two bungalows.
- Highway access control at the western end where the road is already restricted under the railway bridge
- Protection of utility services
- Damage to roads and paths used by the public during set up until public access is properly excluded
- Access through the steep slope to site from one side at western end during silt trap construction may require temporary steps
- Appropriate safety equipment and safe working methods for working in water

Noise:

- Site operating hours and conditions to avoid out of hours/weekend inconvenience to adjoining residents

Sewage disposal from site cabins.

- There are no obvious sewage connections available so all effluent to be tankered off site

Biological:

- Rats
    - Rats are a known problem at Kings Pond and have been seen during daylight hours. They flourish because of the surplus food from bird feeding.
    - Weil's disease is a known problem from the urine of infected rats. The bacteria can enter body through cuts and scratches or through the lining of the mouth, throat and eyes after contact with infected urine or contaminated water.
    - According to UK reports between 50 and 60% of rats carry and excrete the bacterium Leptospira in their urine.
- Geese
    - Canada geese are present in large numbers on site, although these may disperse when works are carried out. These geese produce large volumes of faeces which may include pathogens.
- Algae
    - In previous years algae bloom has occurred because of the high nutrient load in the pond from the geese excreta.
- Avian Flu
    - Whilst there have not been any identified cases of avian flu in the bird population any dead birds will need to be checked and sent for appropriate analysis.
- Dog Poo
    - This has been notified by maintenance staff as present in the bushes around the lake where strimming and other plant maintenance will take place, requiring appropriate coveralls and facemasks.

- **Contractors should identify the appropriate safety equipment, procedures, washing and medical facilities required.**

Notes on pathogens:

Canada geese (Branta canadensis)

Concern has been expressed that Canada geese may transmit diseases to humans, via contact with faeces. Whilst American studies have shown the presence of Actinobacillus suis (causing conjunctivitis) and Clostridium botulinum (resulting in botulism) (Maddux et al. 76, Shayegani et al. 103), and work in London's public parks has indicated the presence of several potential human pathogens in Canada geese faeces (Central Science Laboratory, in prep), there is no conclusive evidence for transmission to humans. Furthermore, there are no data on pathogen loadings, and those of Canada geese may be no higher than those of other waterbird species or the rest of the water environment.

The American studies have identified the following pathogens: Campylobacter, Salmonella Typhimurium, Listeria monocytogenes, Helicobacter canadensis, Arcobacter spp., Enterohemorrhagic Escherichia coli pathogenic strains, Chlamydia psitacci, Cryptosporidium parvum and Giardia lamblia.

Notwithstanding this Canada geese may impinge on public health in other ways. Faeces may make paths or grassed areas slippery, resulting in injuries from falls, and attacks on young children by territorial birds could be dangerous and frightening. Such attacks could also result in accidents to individuals trying to escape the birds' attentions. Canada Geese are not only destructive to ponds, but they can also compact soil and kill grass by overgrazing, make lawns unsightly with accumulations of droppings and feathers, and just be a nuisance due to their aggressive behaviour and noise.

It recommended by the Task and Finish group that it would be useful to have a chemical analysis made next Spring/Summer of the considerable dropping around the car park at Kings Pond to ensure that members of the public are warned, if pathogens found, to wash footwear, buggies etc.

In addition, water quality is significantly impacted by the nutrient outputs of Canada Goose populations utilising ponds. Manure droppings contain an abundance of phosphorus, a limiting nutrient, that will increase algal bloom potential as well as aquatic weed growth. Increased levels of phosphorus can lead to eutrophication conditions. Eutrophication can become harmful to the natural balance of a pond and result in fish kills due to depleted dissolved oxygen levels in the water. Droppings along the banks will be washed into the pond during rainfall events through runoff. A mature goose can produce up to 2-4 lbs. of manure daily.

A **very rough** calculation could be as follows:

A flock of 50 adult geese would produce say 50 x (average 3) x 7 lbs of manure a week.

Assuming a 40 week occupation then this results in 42,000 lb of possible nutrient load.

This in metric represents about 19 ,050 kg. Or the same weight as 31 big agricultural 600kg bags of fertiliser.

Obviously there needs to be allowance for nutrient load and solubility and other factors but the above, very simplistic calculation gives a sense of how much Canada Geese poo is affecting Kings Pond and aiding eutrophication.

Rats

Weil's disease is rare in the UK, with fewer than 40 human cases per year in England and Wales, although it is now believed that between 50% and 60% of rats carry the disease (HSE and RYA info)

Rats are known for their frequent urination. Firstly, rats are social creatures and use urine as a form of communication to mark their territory and signal ownership or safety to other rats. Additionally, rats have a strong sense of smell and rely on odours to interpret their environment. Urine contains chemicals and pheromones that create a unique scent, allowing rats to convey information such as their identity, sex, and fertility. While the exact volume of urine produced by rats may vary, it is estimated that each rat produces between 13-23 millilitres of urine in a 24-hour period. The national rat population is stated as increasing.

Because of the known rat populations around Kings Pond workers will need to take precautions such as:

- wearing protective clothing like gloves, following good basic hygiene including regular hand-washing and avoiding hand to mouth/eye etc contact
- taking rest breaks, including meals and drinks, away from the work area
- washing cuts and grazes immediately with soap and running water. Covering all cuts, abrasions and other breaks in the skin with waterproof dressings and/or gloves