

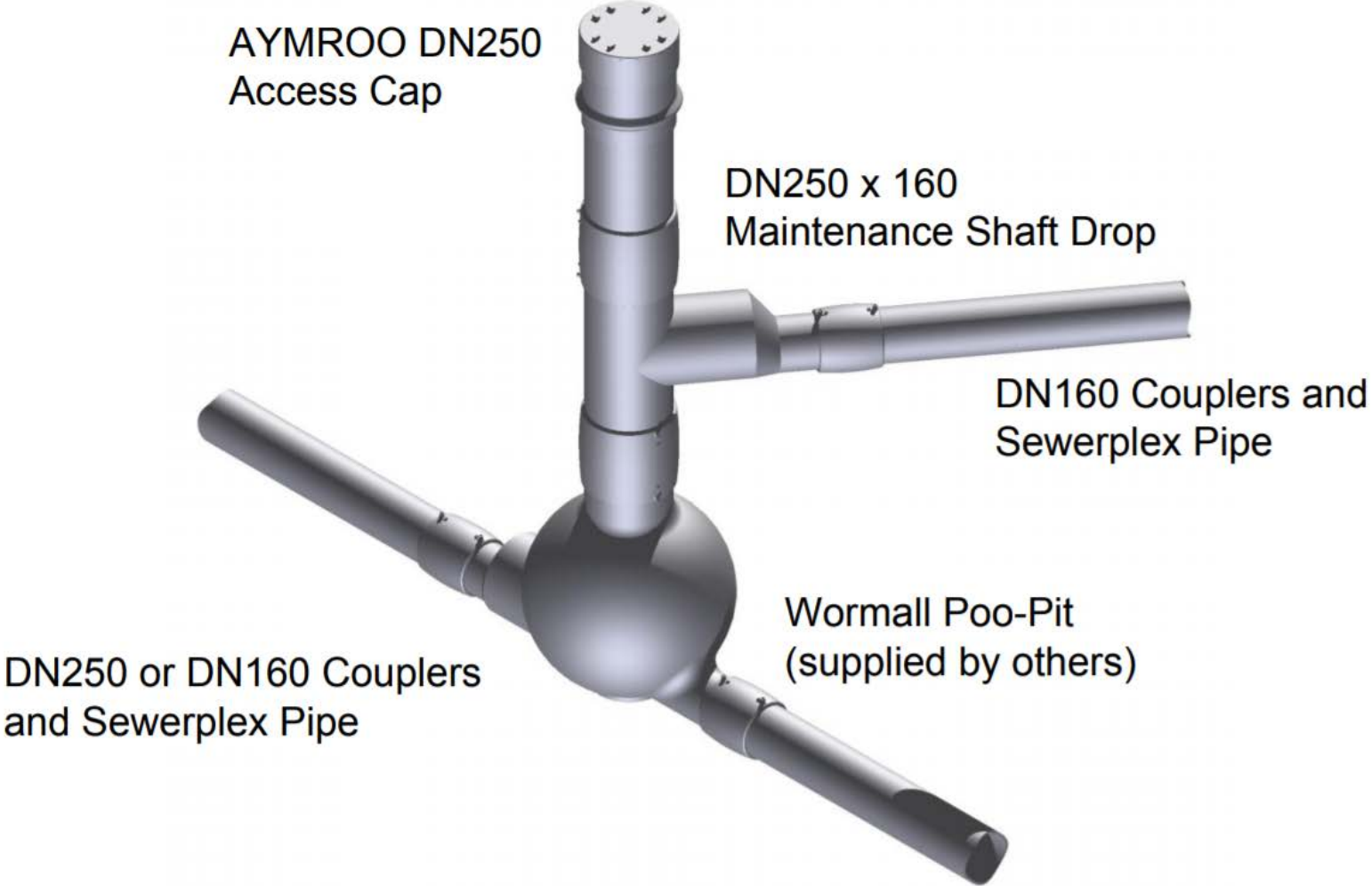
# SEWER MANHOLES

**It's time for a re-think!**

Mick Christeller  
Project Manager  
Tauranga City Council  
September 2017



# Maintenance Shaft - Schematic



# Wormall - Poo Pit (Australia)



SMS - (Australia)



# Aymroo - (Australia)



**DANGER**

**CONFINED SPACE  
ENTER BY PERMIT ONLY**

**PREPARE FOR ENTRY**

- Identify hazards of permit space.
- De-energize and lockout all energy sources.
- Drain, clean and ventilate confined space.
- Isolate confined space - disconnect fill and drain lines.

**TEST ATMOSPHERE**

- Oxygen level between 19.5% and 23.5%.
- Flammable gases/vapors less than 10% of LEL.
- All substances below established PEL.

**PREPARE PERSONAL PROTECTIVE DEVICES**

- Respirator, protective clothing, lifeline and safety harness.

**ATTENDANT AND RESCUE EQUIPMENT IN PLACE  
REVIEW COMMUNICATION PROCEDURES  
OBTAIN AUTHORIZED PERMIT**

SALA

SALA





















# DISADVANTAGES OF MAINTENANCE SHAFTS



3. CCTV camera re-positioning on Maintenance Access base.



4. CCTV camera ready to enter pipeline.



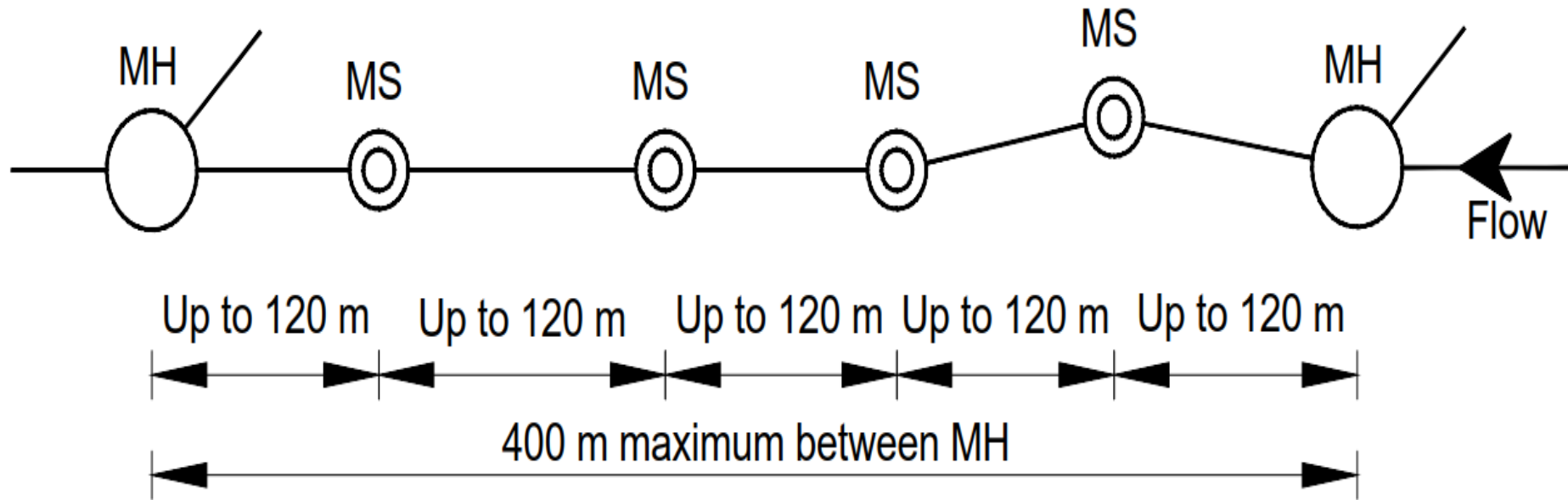


# COST ADVANTAGES OF MSs

<b>Manhole</b>	<b>\$</b>	<b>Maintenance Shaft</b>	<b>\$</b>
1.2m DN1080 base, 0.6m riser, extension ring, concrete lid, frame, cover grill, sealants, rungs, connectors, pipe shorts	4158	Maintenance shaft base, 2m DN225 pipe, slip couplers, DN225 cap, frame and cover	2121
Excavator and equipment	1085		880
Labour	1455		1200
Materials and soil removal	409		230
<b>Totals</b>	<b>7107</b>		<b>4431</b>

# DESIGN PARAMETERS

**NZS 4404**



# THE FUTURE??

- **Plan a group tour to Sydney to visit sites and talk to Councils, Suppliers and Contractors**
- **Seminars in NZ presented by MS Suppliers**
- **Ask the Drainage Managers to consider MS incorporation into sewer networks and to update NZS 4404 to incorporate WSA-02 guidelines**
- **Encourage Councils to include MS guidelines into their Infrastructure Development Codes**
- **Workshops for installation of MSs presented by experienced Australian contractors**


**Your Questions and Comments???**

# NEXT YEAR


- Check out the ORG/ORC gully trap option

Anti-infiltration overflow-relief device

**NEW PRODUCT**



- ✓ Eliminates infiltration through conventional ORG
- ✓ Reduces waste water treatment costs
- ✓ Minimises entry of pests
- ✓ Reduces likelihood untreated discharges

 **ORC™**  
OVERFLOW RELIEF CAP

