

Revaluation 2017

Public Buildings Committee

Practice Note 20 Valuation of Waste Water Treatment Works

1.0 Introduction

- 1.1 This Practice Note deals with the valuation of Waste Water Treatment Works (WWTW), including septic tanks, which serve areas with a Design Population equivalent (DPE) not exceeding 8 000. DPE figures are calculated using the “notional population” comprising resident population, a percentage of transient population, liquor input and trade waste and are provided by Scottish Water on a central basis. Guidance is also given on the valuation of WWTW carried out using a full Contractor’s Basis.

2.0 Basis of Valuation

- 2.1 Subjects covered by this Practice Note should be valued on the Contractor’s Basis. An abbreviated Contractor’s Basis valuation can be carried out using the table of rates in Appendix A where no information is readily available on file to enable a full Contractor’s Basis valuation.
- 2.2 All WWTW where the DPE exceeds 8,000 should be valued on a full Contractor’s Basis using costs appropriate for the tone date of 1st April 2015 having regard to Basic Principles Committee Practice Note 2 and Public Buildings Committee Practice Note 4, where appropriate.

3.0 Survey and Measurement

- 3.1 If carrying out a full Contractor’s Basis valuation, details of all rateable items will be required.
- 3.2 Building areas should be calculated on a gross internal basis (GIA) for each main floor.
- 3.3 Site area should be calculated together with the areas of any car parks, roadways and other paved or landscaped surfaces. Measurements and details of boundary walls, fences and any other items in the nature of external works, civil works and plant and machinery should also be noted.

4.0 Building and External Works Costs

The unit cost rates contained in the Rating Cost Guide have been derived to reflect a £3m contract size and tone date of 1 April 2015. The costs applied require to be further adjusted by location factor. Refer to SAA Basic Principles Committee Practice Note 2 (Contractors Basis Valuations) for guidance on the appropriate location factor.

5.0 Valuation

5.1 Full Contractor's Basis Valuations should be carried out in accordance with SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations). See 6.0 below.

5.2 Where insufficient detail is available, the DPE may be used, if below 8,000, as the unit of measurement to determine Estimated Replacement Cost using the table of rates shown in Appendix A. The rates detailed include all common rateable items at the subject exclusive of land value, and include contract size and fees adjustments.

5.3 For External Works see 6.2.

5.4 Classifications

For the purposes of valuation using DPE, WWTW are classified as follows.

Tertiary Treatment Stages

Tertiary A1 WWTW with a secondary activated sludge process where treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, micro-strainers, slow sand filters, tertiary nitrifying filters, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage.

Tertiary A2 WWTW with a secondary activated sludge process where treatment methods also include rapid-gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard Chemical Oxygen Demand (COD) and colour removal, where used as a tertiary treatment stage.

Tertiary B1 WWTW with a secondary stage biological process where treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, microstrainers, slow sand filters, tertiary nitrifying filters, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage.

Tertiary B2 WWTW with a secondary biological process where treatment methods also include rapid gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard COD and colour removal, where used as a tertiary treatment stage.

Secondary Treatment Stages

Secondary Activated Sludge WWTW where treatment methods include preliminary and primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals and where treatment methods include activated sludge (including diffused air aeration, coarse bubble aeration, mechanical aeration, oxygen injection, submerged filters) and other equivalent techniques including deep shaft process, extended aeration (single, double and triple ditches) and biological aerated filters as secondary treatment.

Secondary Biological WWTW where treatment methods include preliminary and primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals and where treatment methods include rotating biological contactors and biological filtration (including conventional filtration, high rate filtration, alternating double filtration and double filtration), root zone treatment (where used as a secondary treatment stage).

Primary Treatment Stages

Primary WWTW where treatment methods are restricted to preliminary and primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals.

Septic Tanks A tank, usually below ground, into which sewage flows and is decomposed by anaerobic digestion.

6.0 Estimated Replacement Cost (ERC)

6.1 Unit Cost Rates (Buildings)

Recommended unit cost rates excluding professional fees for rateable items are available from the Rating Cost Guide.

6.2 Unit Cost Rates (External Works)

External Works should be valued in accordance with SAA Public Buildings Committee Practice Note 4 (Valuation of Contractor's Basis Subjects, Areas Adjustment, External Works' Costs and Land).

6.3 Adjustments to ERC

Adjustments in respect of contract size should be made in accordance with the recommendations contained in SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations) if a full Contractor's Basis valuation is carried out. **An addition of 7.5% for professional fees should be made regardless of contract size.** No adjustment for contract size or fees is required for those WWTW valued by reference to DPE.

7.0 Adjusted Replacement Cost (ARC)

7.1 In applying age and obsolescence allowances reference should be made to guidance in SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations). In particular it should be noted that allowances in respect of age in excess of 50% should only be given to buildings and plant in exceptional circumstances.

If valuing WWTW with DPE up to 8 000 using the rates set out in Appendix A then the scale of age and obsolescence detailed in Appendix B should be adopted

7.2 Further allowances of a functional and technical nature should be considered in accordance with SAA Basic Principles Committee Practice Note 2 (Contractor's Basis Valuations) and SAA Public Buildings Committee Practice Note 4 (Valuation of Contractor's Basis Subjects, Areas Adjustment, External Works' Costs and Land).

8.0 Plant and Machinery

8.1 Buildings' unit cost rates may be inclusive of service plant typically found at WWTW. Some buildings' unit cost rates will need enhanced according to guidance in the Rating Cost Guide where service plant or other item is not included in the unit cost rate stated. Other rateable items of plant and machinery not already reflected in the rates or stated as an enhancement to the unit cost rate should be dealt with in terms of the Valuation for Rating (Plant & Machinery (Scotland) Regulations 2000 (as amended) and valued with reference to the Rating Cost Guide.

9.0 Land

9.1 Land value should be determined by reference to local evidence and SAA Public Buildings Committee Practice Note 4 (Valuation of Contractor's Basis Subjects, Areas Adjustment, External Works' Costs and Land).

10.0 Decapitalisation Rate

10.1 The appropriate statutory decapitalisation rate should be used.

11.0 End Allowance

11.1 Over - Capacity

An adjustment may be required where the DPE of the WWTW is greater than the Actual Population Equivalent (APE) it serves. The APE is a notional figure calculated with regard to resident population; transient population and cessed liquor input and trade effluent expressed in terms of population.

If a WWTW serves an area where there is a local tourist industry which may produce different throughput at different times of the year the WWTW will have been designed to be capable of dealing with the quantity of flow at peak holiday times. In comparison the flow at off peak times will be considerably reduced.

No over-capacity allowance should be given for tourist season fluctuations.

However where a waste water treatment works has been built with a capacity which reflects a projected population increase which has not been reached, and is not likely to be reached between the years of revaluation, or for the treatment of a trade effluent process which may now have ceased, then it may be necessary to make an allowance.

The figure for "Used Capacity" is derived by taking the APE as a percentage of the DPE: i.e. $\frac{APE}{DPE} \times 100$.

The table of allowances is detailed in Appendix C

It should be noted a WWTW may receive sludge from other sources or WWTW. The facilities to treat or handle such sludge are not directly connected to the determination of DPE. Accordingly, where there is such sludge treatment or handling facilities on a WWTW, the overcapacity allowance should not be applied to this part of the valuation unless the waste water treatment works only stores or treats sludge drawn from its own received effluent. In these circumstances the allowance should also be granted to the sludge treatment items.

- 11.2 Any other factors or circumstances which might affect the value of the occupation of the lands and heritages as a whole should also be reflected at this stage. An adjustment under this head should not duplicate adjustments made elsewhere.

**TABLE OF RATES PER HEAD OF DESIGN POPULATION EQUIVALENT (DPE)
TO ESTIMATED REPLACEMENT COST (EXCL SITE)**

DPE	TYPE OF WORKS		
	SEPTIC TANKS	PRIMARY	ALL OTHER CATEGORIES
100	£1 140	£600	£1 140
200	£1 040	£570	£1 110
300	£960	£490	£1 070
400	£850	£490	£1 030
500	£800	£470	£1 000
750	£700	£470	£920
1 000	£570	£410	£840
1 250	£520	£390	£770
1 500	£470	£390	£740
1 750	£470	£310	£690
2 000	£410	£280	£650
2 250			£590
2 500			£580
2 750			£570
3 000			£540
3 250			£510
3 500			£510
3 750			£480
4 000			£480
4 250			£470
4 500			£460
4 750			£460
5 000			£420
8 000			£390

Interpolate rates for DPE between points on the scale

TABLE OF AGE & OBSOLESCENCE

YEAR	SEPTIC TANK & PRIMARY	ALL OTHER CATEGORIES	YEAR	SEPTIC TANK & PRIMARY	ALL OTHER CATEGORIES
2017			1990	2.50%	7.50%
2016			1989	3.00%	8.00%
2015			1988	3.50%	8.50%
2014			1987	4.00%	9.00%
2013			1986	4.50%	9.50%
2012			1985	5.00%	10.00%
2011			1984	5.50%	10.50%
2010		0.00%	1983	6.00%	11.00%
2009		0.50%	1982	6.50%	11.50%
2008		0.50%	1981	7.00%	12.00%
2007		0.50%	1980	7.50%	12.50%
2006		0.50%	1979	8.00%	13.00%
2005		0.50%	1978	8.50%	13.50%
2004		1.00%	1977	9.00%	14.00%
2003		1.00%	1976	9.50%	14.50%
2002		1.50%	1975	10.00%	15.00%
2001		2.00%	1974	10.50%	MAX.
2000		2.50%	1973	11.00%	
1999		3.00%	1972	11.50%	
1998		3.50%	1971	12.00%	
1997		4.00%	1970	12.50%	
1996		4.50%	1969	13.00%	
1995	0.00%	5.00%	1968	13.50%	
1994	0.50%	5.50%	1967	14.00%	
1993	1.00%	6.00%	1966	14.50%	
1992	1.50%	6.50%	1965	15.00%	
1991	2.00%	7.00%		MAX.	

TABLE OF ALLOWANCES FOR OVER - CAPACITY

Used Capacity	Percentage Deduction
80% or more	NIL
At 75%	5%
At 70%	10%
At 65%	15%
At 60%	20%
At 55%	25%
At 50%	30%
At 45%	35%
At 40%	40%
At 35%	45%
At 30%	50%
At 25%	52.5%
Under 25%	55%