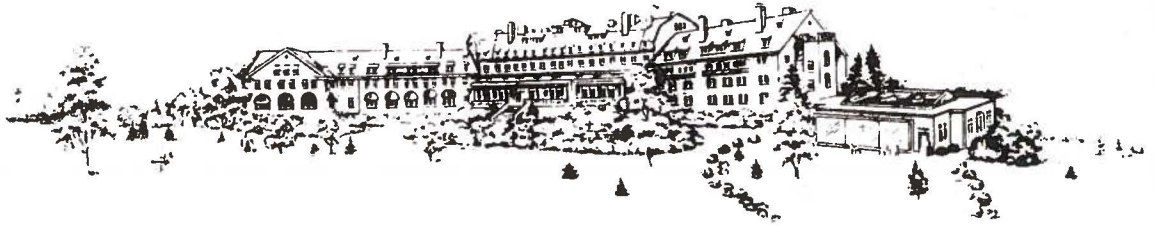


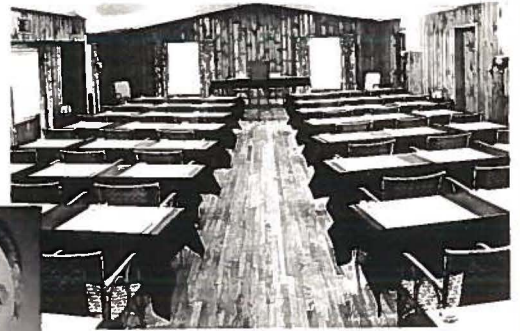


District Heating

JANUARY—FEBRUARY—MARCH 1975



**“LET’S TAKE A NEW LOOK”
at the
66TH ANNUAL CONFERENCE**



PRESIDENT
EASTON

**on June 23-25
at Skytop, Pennsylvania**

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Municipal Incineration Plants With Heat Utilization



compiled by A. Ernest Haseler

Mr. Haseler, C.Eng., FIEE, FIHVE, FFB, who compiled the data on the following pages especially for IDHA, founded the District Heating Association Limited of the United Kingdom in 1966, and was its first Chairman.

Mr. Haseler's knowledge of and interest in district heating has made him an internationally-sought speaker, author and consultant. He is a prolific author of technical material about district heating, and his articles are published by the top engineering societies of Europe in their technical publications. He recently completed a bibliography of district heating books and articles for the U.K. Department of the Environment, perusing thousands of works from all over the world to obtain the most valuable ten per cent; summaries of the books and articles are included in the bibliography.

He came to the United States in 1972 to attend the IDHA Annual Conference that year in June and presented his paper "New Techniques for Telethermics: Their Critical Importance for Conservation and the Environment." This presentation included data concerning the several years of tests conducted under Mr. Haseler's supervision at Cardington, Bedfordshire, England, on underground mains—effects of soil and ground water conditions, heat losses, expansion forces and movements, reliability, etc.

The District Heating Association Limited, U.K., initiated the International District Heating Conventions which were held in London in 1970 (the first); Budapest, Hungary in 1973; and the third will be in Warsaw, Poland in April 1976. Mr. Haseler is a member of the International Committee for those Conventions. DHAL has grown rapidly since its inception in 1966, and now has branches throughout England, and in Scotland, Ireland and Wales.

District heating has been accepted in Europe on a much broader scale than in the United States; and in the U.K., Mr. Haseler has been its greatest champion. He is now seeing the fruits of his labors and years of struggle reaping great rewards, because now it appears that district heating has been accepted as an inevitable necessity by the Government. It has been estimated that district heating will reduce oil imports by £1000 million per year. Plans are now being made for heat wasted from power stations and industry to be piped to and within towns, and the Central Electricity Generating Board has publicly invited authorities to apply to it for a heat supply. In recent years, approximately 550 district heating systems have been constructed in the U.K.—most of them small, but others like Nottingham (see April-May-June 1974 issue of *District Heating*) and Peterborough are large.

Until recently, Mr. Haseler was the Senior Engineer and Principal Professional Officer of the U.K. Government's Department of the Environment in London. Now, he is a specialist consultant on district heating, telethermics and energy conservation. He is a consultant for the U.K. Government, specialist consultant to the largest consulting firm in Sweden, and to the British Steel Corporation. He has received requests for his services from the Governments of Canada, New Zealand, Finland, Italy, Japan, and other countries. A recent request for advice came from Sandia Laboratories in the State of New Mexico, U.S.A. Mr. Haseler is also Chairman of the British Standards Committee.

(Editor's Note: The International District Heating Association, publisher of District Heating, takes this opportunity to thank, in print, its good friend, Mr. A. Ernest Haseler, for taking time in his busy schedule to gather and compile the important data printed hereafter. To our knowledge, it is the only such tabulation in existence; and we hope that we may, in future issues, be able to print additional listings to keep our members and subscribers knowledgeable about district heating activities around the world.)

MUNICIPAL INCINERATION PLANTS WITH HEAT UTILIZATION

This compilation lists 154 plants in Europe and one in Russia. Some listings are not complete because the information had not been received in time to be included. Supplementary data, additions and/or corrections, will be printed in future issues, when available.

LOCATION	MANUFACTURER	GRATE	OPERATIONAL START	NO. OF FURNACES X CAPACITY IN T/H	TOTAL CAPACITY PER 24 H	HEAT UTILIZATION MEDIUM AND OBJECTIVE
AUSTRIA						
Wien	Von Roll AG	Von Roll	1963	3 x 8	600	Steam/hospital heating
Wien-Spittelau	Josef Martin	Martin	1971	2 x 15	720	Steam
BELGIUM						
Bruxelles-Schaerbeck	Von Roll AG	Von Roll	1957	2 x 8	400	Steam/power generation
DENMARK						
Aalborg	E. Rasmussen A/S	Flynn & Emrich	1968	1 x 5.5	276	Hot water district heating
Aalborg	Volund A/S	Volund	1972	1 x 6	276	Hot water district heating
Aarhus	Bruun & Sorensen A/S	B & S	1969	1 x 0.75	18	Hot water district heating
Albertslund	Bruun & Sorensen A/S	B & S/Destructor	1968	1 x 3.5	180	Hot water district heating
Albertslund	Bruun & Sorensen A/S	B & S	1974	1 x 4	180	Hot water district heating
Brondbyerne	Bruun & Sorensen A/S	B & S	1971	1 x 4	96	Hot water district heating
Copenhagen-Amager	Volund A/S	Volund	1971	3 x 12	864	Hot water district heating
Copenhagen-West	Volund A/S	Volund	1971	3 x 12	864	Hot water district heating
Ebeltoft	E. Rasmussen A/S		1967	1 x 1	24	Hot water district heating
Fredericia	E. Rasmussen A/S	Flynn & Emrich	1966	2 x 2.3	110	Hot water district heating
Frederiksberg	Volund A/S	Volund	1934	2 x 6	288	Steam district heating
Frederikshavn	Bruun & Sorensen A/S	B & S/Destructor	1965	1 x 3	168	Hot water district heating
Frederikshavn	Bruun & Sorensen A/S	B & S	1971	1 x 4	168	Hot water district heating
Haderslev	Volund A/S	Volund	1966	1 x 3	72	Hot water district heating
Helsingor	Helsingor Skibsvaerft & Maskinbyggeri	Flynn & Emrich	1967	1 x 4.5	108	Hot water district heating
Herning	Bruun & Sorensen A/S	B & S	1971	1 x 3	168	Hot water district heating
Herning	Bruun & Sorensen A/S	B & S	1973	1 x 4	168	Hot water district heating
Hjorring	Volund A/S	Volund	1965	1 x 2.5	60	Hot water district heating
Holstebro	Bruun & Sorensen A/S	B & S	1970	1 x 3	72	Hot water district heating
Horsens	Bruun & Sorensen A/S	B & S	1974	1 x 5	120	Sludge drying
Horsholm	Volund A/S	Volund	1969	2 x 3	144	Hot water district heating
Kolding	Bruun & Sorensen A/S	B & S/Destructor	1969	1 x 3	144	Hot water district heating
Kolding	Bruun & Sorensen A/S	B & S	1972	1 x 3	144	Hot water district heating
Korsor	Bruun & Sorensen A/S	B & S	1972	1 x 2	48	Hot water district heating

Nyborg	Bruun & Sorensen A/S	B & S/Destructor	1970	1 x 3	72	Hot water district heating
Odense-Dalum	Volund A/S	Volund	1964	1 x 2	48	Hot water district heating
Ringsted	E. Rasmussen A/S	Flynn & Emrich	1969	1 x 2	48	Hot water district heating
Roskilde	Volund A/S	Volund	1966	2 x 3	144	Hot water district heating
Rudkobing	E. Rasmussen A/S		1966	1 x 1	48	Hot water district heating
Rudkobing	Bruun & Sorensen A/S		1971	1 x 1	48	Hot water district heating
Slagelse	Bruun & Sorensen A/S	B & S	1971	1 x 3	72	Hot water district heating
Struer	Bruun & Sorensen A/S	B & S/Destructor	1967	1 x 2	48	Hot water district heating
Svendborg	Bruun & Sorensen A/S	B & S/Destructor	1970	1 x 3.5	84	Water district heating (not yet connected)
Sonderborg	Bruun & Sorensen A/S	B & S/Destructor	1970	1 x 3	144	Hot water district heating
Sonderborg	Volund A/S	Volund	1973	1 x 3	144	Hot water district heating
Taastrup	Bruun & Sorensen A/S	B & S/Destructor	1967	1 x 3	72	Hot water district heating

FINLAND

Helsinki	Von Roll AG	Von Roll	1961	2 x 8	384	Steam district heating
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FRANCE

Blois	Von Roll AG	Von Roll			150	
Dieppe	Von Roll AG	Von Roll				
Grenoble	Tunzini S.A./VKW	Dusseldorf	1972	2 x 6.25	300	Steam district heating
Lyon	Combustion Engineering	Volund	1963	2 x 12	720	Steam/nearby power station, industry
Lyon	Combustion Engineering	Volund	1964	1 x 12	720	Steam/nearby power station, industry
Metz	Construction Navales et Industrielles de la Mediterranee	Martin	1970	2 x 6	288	Steam district heating
Paris Issy-les-Moulineaux	Construction Navales et Industrielles de la Mediterranee	Martin	1965	4 x 17	1632	Steam/power generation, district heating
Paris-Ivry	Construction Navales et Industrielles de la Mediterranee	Martin	1969	2 x 50	2400	Steam/power generation, district heating
Paris St. Ouen	Combustion Engineering	Volund	1954	4 x 8.5	816	Steam district heating
Rennes	Construction Navales et Industrielles de la Mediterranee	Martin	1969	2 x 5	240	Steam district heating
Rouen	Combustion Engineering	Chain		2 x 8	384	Steam/power generation
Toulouse	Tunzini S.A./VKW	Dusseldorf	1968	2 x 8	384	Steam/power generation

GERMANY

Bad Godesberg	Wistra Ofenbau	Volund	1964	2 x 4	192	Steam district heating, industry
Berlin-West	Borsig	Walzenrost Dusseldorf	1967-69	6 x 16	2304	Steam/power generation
Bremen	VKW	Walzenrost Dusseldorf	1970	3 x 15	1080	
Darmstadt	Von Roll AG	Von Roll	1966	2 x 8	400	Steam district heating
Dusseldorf	VKW	Walzenrost Dusseldorf	1961	1 x 10	240	Steam/power generation
Dusseldorf	VKW	Walzenrost Dusseldorf	1965	4 x 10	1260	Steam/power generation
Dusseldorf	VKW	Walzenrost Dusseldorf	1965	1 x 12.5	1260	Steam/power generation

LOCATION	MANUFACTURER	GRATE	OPERATIONAL START	NO. OF FURNACES X CAPACITY IN T/H	TOTAL CAPACITY PER 24 H	HEAT UTILIZATION MEDIUM AND OBJECTIVE
GERMANY (continued)						
Essen-Karnap	VKW	Chain	1961-65	5 x 20	2400	Steam/power generation, combined refuse, coal firing
Frankfurt/Main	Von Roll AG	Von Roll	1966-67	4 x 12.5	1200	Steam/power generation, district heating
Hagen	VKW	Walzenrost Dusseldorf	1967	3 x 6	432	Steam prepared for heat utilization
Hamburg-Borsigster	Von Roll AG	Von Roll	1959	1 x 8	960	Steam/power generation, district heating
Hamburg-Borsigster	Von Roll AG	Von Roll	1960	1 x 8	960	Steam/power generation, district heating
Hamburg-Borsigster	Von Roll AG	Von Roll	1962	3 x 8	960	Steam/power generation, district heating
Hamburg-Borsigster	Josef Martin	Martin	1967	1 x 12	288	Steam/power generation, district heating
Hamburg-Stellinger Moor	Josef Martin	Martin	1972	2 x 24.7	1184	Steam/power generation, district heating
Iserlohn	VKW	Chain	1969-70	2 x 8	384	Steam/power generation, combined refuse, oil
Kassel	VKW	Walzenrost Dusseldorf	1968-69	2 x 10	480	Steam district heating
Kiel	VKW	Walzenrost Dusseldorf	1973	2 x 5	240	Steam district heating
Landshut	Von Roll AG	Von Roll				
Leverkusen	Von Roll AG	Von Roll			400	
Ludwigshafen	Von Roll AG	Von Roll	1967	2 x 8	400	
Mannheim	Kohlenscheidungs-gesellschaft	Chain	1967	2 x 18	864	Steam district heating
Munchen Nord	Josef Martin	Martin	1964	2 x 25	2160	Steam/power generation, district heating, combined refuse coal firing
Munchen Nord	Josef Martin	Martin	1966	1 x 40	2160	Steam/power generation, district heating, combined refuse coal firing
Munchen Sud	Josef Martin	Martin	1969	1 x 40	1920	Steam/power generation, district heating, combined refuse, oil, gas, coal firing
Munchen Sud	Josef Martin	Martin	1971	1 x 40	1920	Steam/power generation, district heating, combined refuse, oil, gas, coal firing
Neun Kirchen	Josef Martin	Martin	1970	1 x 5	120	Hot water district heating
GMVA Niederrhein, Duisburg	VKW	Walzenrost Dusseldorf	1972	3 x 22	1584	Steam/power generation, district heating
Nurnberg	Von Roll AG	Von Roll	1968	3 x 15	1080	Steam district heating
Offenbach/Main	VKW	Walzenrost Dusseldorf	1969	3 x 10	720	Steam/power generation, district heating
Rosenheim	VKW	Walzenrost Dusseldorf	1964	1 x 4.5	252	Steam/power generation, district heating
Rosenheim	VKW	Walzenrost Dusseldorf	1969	1 x 6	252	Steam/power generation, district heating
Solingen	Von Roll AG	Von Roll			400	
Stuttgart	Josef Martin	Martin	1965	1 x 20	480	Steam/power generation, district heating
Stuttgart-Munster	VKW	Walzenrost Dusseldorf	1965	1 x 20	960	Steam/power generation
HOLLAND						
Amsterdam	Josef Martin	Martin	1969	4 x 22.5	2160	Steam/power generation

Dordrecht	Josef Martin	Martin	1972	3 x 7	500	Sludge drying
Haag	Von Roll AG	Von Roll	1968	3 x 12.5, 1 x 14	1230	Steam district heating
Leiden	Von Roll AG	Von Roll	1966	2 x 4	200	Steam district heating
Rosendaal	Bruun & Sorensen A/S	B & S	1975	2 x 4	192	Hot water district heating (prepared)
Rotterdam	Josef Martin	Martin	1964	4 x 15.6	1500	Steam/power generation
Rotterdam-Botlek	Rotterdamsche Droogdok Maatschappij NV	Dusseldorf	1972	6 x 20	2800	Steam/power generation

ITALY

Bologna	Von Roll AG	Von Roll			300	
Cava Dei Terreni	De Bartolomeis	DB/Venien		2 x 1.6	77	
Como	De Bartolomeis	DB/Venien		1 x 4	100	Steam
Firenze	De Bartolomeis	DB/Venien	1974			
Florence			1973-74			
Genoa	Von Roll AG	Von Roll				
Milano/Via Zama	De Bartolomeis	Volund	1968	2 x 12	600	Steam/power generation
Milano/Figino	De Bartolomeis	DB		2 x 12	600	Steam/power generation
Padova	Alberti-Fonsar	A-F		1 x 5.5, 1 x 6	300	Steam/power generation
Reggio Emilia	De Bartolomeis	DB		2 x 4	200	
Roma/Sozain-Cecchini	Alberti-Fonsar	A-F		6 x 4	600	Steam
Roma/Slia-Sarr	Alberti-Fonsar	A-F		2 x 2	100	Steam
Savona	De Bartolomeis	DB/Venien		1 x 2.5	60	

NORWAY

Oslo	Esslingen Maschinenfabrik	Esslingen	1967	2 x 6.5	312	Steam/power generation, industry
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RUSSIA

Moscow	Josef Martin	Martin	1975	2 x 8.4	400	Steam district heating
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SWEDEN

Boraas	AB Landsverk	Volund	1965	2 x 2.5	240	Steam/power generation, district heating
Boraas	AB Landsverk	Volund	1972	1 x 5	240	Steam/power generation, district heating
Borlange	Plibrico Eldfast Material AB	Impact Stoker	1963	2 x 2	96	Hot water district heating
Goteborg/V.Frolunda	Plibrico Eldfast Material AB	Impact Stoker	1962	1 x 4	96	Hot water district heating
Goteborg/Savenas	Von Roll AG	Von Roll	1972	3 x 12.5	900	Hot water district heating
Halmstad	Josef Martin GmbH/AB Tabougnar	Martin	1971	2 x 5	240	No heat utilization yet
Koping	AB Landsverk		1972	2 x 5	240	Hot water/hospital heating
Linkoping	AB Landsverk	Volund	1958	2 x 2.5	240	Steam/power generation, district heating
Linkoping	Von Roll AG	Von Roll	1966	1 x 5	240	Steam/power generation, district heating
Lulea	AB Landsverk	Volund	1968	2 x 6	288	Sludge drying
Malmo-Spillepeng	Josef Martin GmbH/AB Tabougnar	Martin	1973	2 x 8.5	408	Hot water/sludge drying
Stockholm-Bollmora	Von Roll AG	Von Roll	1967	1 x 5	120	Hot water district heating
Stockholm-Huddinge	AB Norba	Destructor	1971	1 x 4	96	Hot water/hospital heating
Stockholm-Solna	AB Norba	Destructor	1967	3 x 4	288	Hot water district heating

LOCATION	MANUFACTURER	GRATE	OPERATIONAL START	FURNACES X CAPACITY IN T/H	TOTAL CAPACITY PER 24 H	HEAT UTILIZATION MEDIUM AND OBJECTIVE
SWEDEN (continued)						
Stockholm-Bredang	AB Norba	Destructor	1965	1 x 3	72	Hot water district heating
Stockholm-Hogdalen	Vereinigte Kesselwerke GmbH	Dusseldorf	1970	2 x 15	720	Steam/power generation
Stockholm-Sundbyberg	AB Landsverk	Volund	1954	2 x 2.5	120	Steam/hot water district heating
Stockholm-Taby	Plibrico Eldfast Material AB	Impact	1960	1 x 3	72	Hot water district heating
Trollhattan	AB Norba/Bruun & Sorensen AB	B & S	1969-74	1 x 3.3	84	Hot water district heating
Umea	Von Roll AG	Von Roll	1970	2 x 4.2	202	Hot water district heating
Uppsala	AB Landsverk	Volund	1962	2 x 2.5	312	Steam/district heating
Uppsala	AB Landsverk	Volund	1965	1 x 3	312	Steam/district heating
Uppsala	Bruun & Sorensen AB	B & S	1971	1 x 5	312	Steam/district heating
SWITZERLAND						
Baden Brugg	Fonderie e Officine di Saronno	Alberti-Fonsar	1970	2 x 4	200	Steam/power generation
Basel 1	Von Roll AG	Volund	1943	2 x 8	400	Steam/district heating, industry
Basel 2	Von Roll AG	Von Roll	1969	2 x 12	600	Steam/power generation, district heating, industry
Berne	Von Roll AG	Von Roll	1954	2 x 4	200	Steam/district heating, industry
Buchs	Fonderie e Officine di Saronno	Alberti-Fonsar	1974	1 x 5	120	Steam/power generation, district heating
Colombier	Fonderie e Officine di Saronno	Alberti-Fonsar	1971	2 x 5	240	Steam/power generation
Geneve	Von Roll AG	Von Roll	1966	2 x 8	400	Steam/power generation
Hinwil	Martin-Sulzer	Martin	1971	1 x 5	120	Steam/power generation
Lausanne	Von Roll AG	Von Roll	1958	2 x 4	200	Steam district heating
Limmattal	Martin-Sulzer	Martin	1971	2 x 2.6	120	Steam/power generation
Locarno	De Bartolomeis	DB/Venien	1969	2 x 2.5	120	Industry
Luzerne	Von Roll AG	Von Roll	1971	2 x 4	200	Steam/power generation, district heating
Monthey	De Bartolomeis	DB/Venien		2 x 7.5	360	
Neuchatel	Alberti-Fonsar	A-F		2 x 4	200	Steam/power generation
Winterthur	Von Roll AG	Von Roll	1965	2 x 4	200	Steam/power generation, district heating
Zurich 1	Heenan-Froud		1940	2 x 3.8	180	Steam/power generation, district heating
Zurich 2	Von Roll AG	Von Roll	1969	2 x 11	520	Steam/power generation, district heating
Zurich 2 Extension	Josef Martin		1973	1 x 18.7	450	Steam/power generation, district heating
UNITED KINGDOM						
Coventry	Head Wrightson	Martin	1975	3 x 12	864	Steam converted to hot water/industry
Edmonton/London	Motherwell Bridge Tacol/VKW	Dusseldorf	1969	5 x 14	1680	Steam/power generation
Mansfield	Bruun & Sorensen	B & S	1972	1 x 5.6	135	Hot water district heating
Nottingham	Head Wrightson	Martin	1973	2 x 11.5	552	Power generation/hot water district heating
Otley	Bruun & Sorensen	B & S	1974	1 x 3.5	84	Hot water district heating (not yet connected)