

COMPANY PROFILE

TEDES specializing in **cooling, heating,**
and **energy** services, we deliver reliable
and eco-friendly systems for various
industries.



TERM**DINAMIKA**
ENERGI SELARAS

ABOUT US

“Optimizing Energy, Empowering Sustainability”

We are committed to deliver energy and thermodynamics solutions that are efficient, reliable and sustainable.

OUR VISION

We aim to provide efficient, reliable, and sustainable solutions in cooling, heating, and energy for a better tomorrow.

OUR MISSION

We provide eco-friendly cooling, heating, and energy efficiency solutions that promote environmental stewardship, led by TEDES's dedication to innovation.



Innovative Green Solutions

Our focus is providing the industry, commercial building, and food cold chain for innovative green cooling solutions.



Sustainable Heating/Cooling Project

Total solutions for your heating/cooling projects, from first ideas to working system.



Reliable Process Support

Our dedicated team will ensure reliable support for your business-critical processes through eco-friendly solutions.



TEDES is part of ATW Group (ATW Group is solar photovoltaic complete system integration and energy storage solutions). Our team has extensive experience in HVAC, heating/cooling processes and project management you can **Trust**.

We provide heating, cooling and electrical energy solutions that are more efficient, practical, **environmentally** friendly, easy to monitor (IoT ready). By selecting the latest proven reliable technology and collaborating with experienced partners, we ensure **sustainability** ecosystem.

We are **confident** in being business solution partner for our customers, especially in the energy sector, and thermodynamics which are the core focus of our business

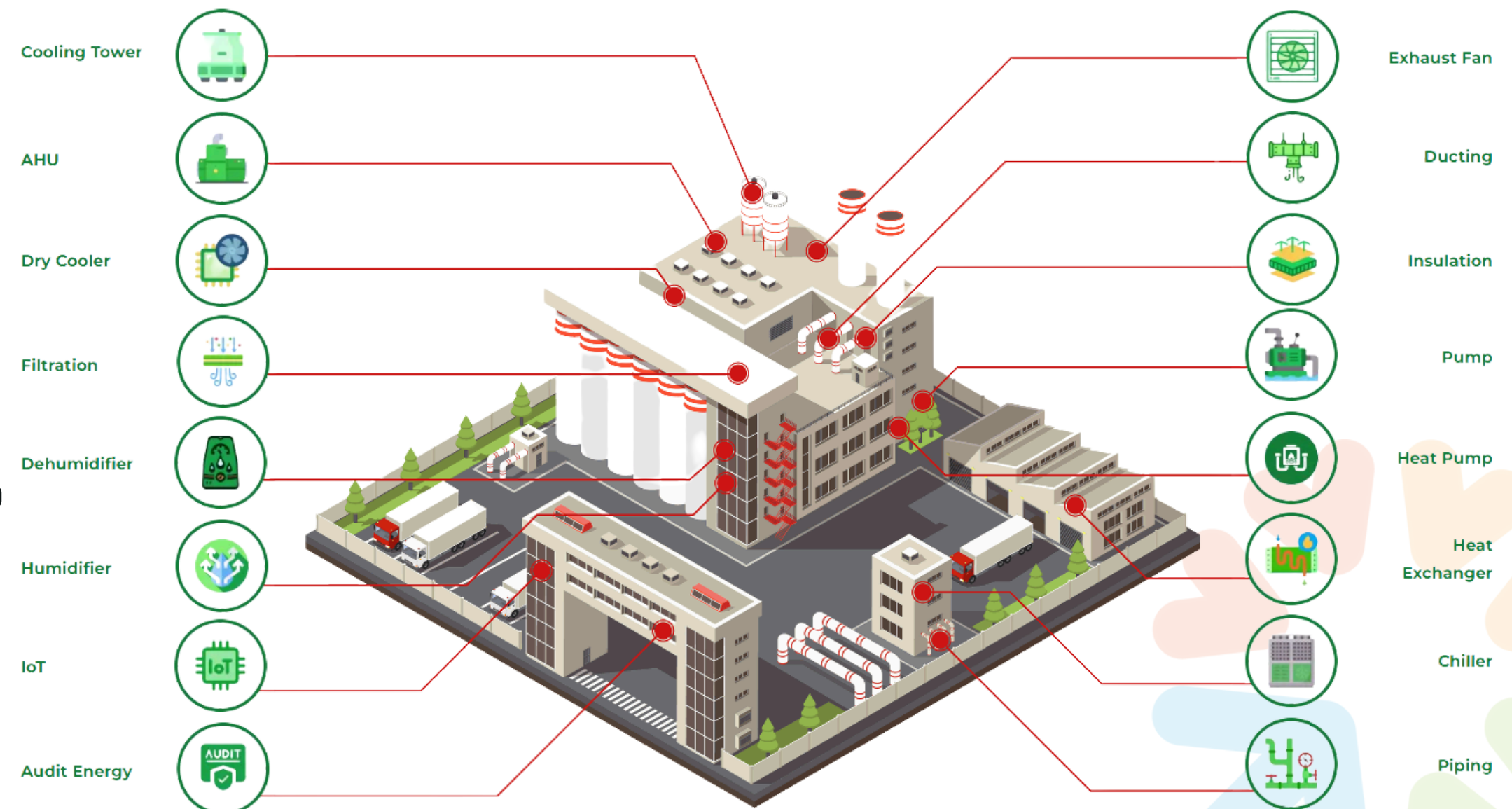
Our customers come from various industries, commercial buildings, food processing cold chains and partners seeking to undertake collaboration turnkey projects. We analyze each customer's specific needs and offer tailored solutions to meet their objectives

INDUSTRIAL SOLUTION

Innovative industrial heating and cooling systems tailored for your specific heating and cooling demand. We ensure our installation comply with all relevant local regulations, codes, and industry guidelines.

Cutting-edge industrial heating and cooling systems with innovative solutions and tailored for your specific demand to deliver efficient temperature control while ensuring full compliance with applicable local regulations, standards, and industry guidelines. These advanced solutions are designed to optimize performance, promoting sustainability and reliability in industrial environments.

SUSTAINABLE HEATING AND COOLING SOLUTION



BUILDING SOLUTION

Energy-efficient heating and cooling systems for buildings, designed to maintain optimal indoor air quality and comfortable.

Our energy-efficient heating and cooling systems maintain building temperatures needs while reducing energy use, offering sustainable and cost-effective solutions for businesses and property owners.

With advanced technology, these systems optimize energy during peak and off-peak hours, integrating smoothly with building management systems. Our specialists ensure a seamless setup, allowing for immediate and long-term savings.

COOLING INNOVATION FOR THE FUTURE



FOOD PRESERVATION

A food preservation system plays a crucial role in preserving perishable goods like vegetables, meat, and seafood by maintaining optimal temperature conditions.

SUSTAINABLE SOLAR FOOD PRESERVATION

Utilizing renewable energy sources, such as solar power in conjunction with sandwich panel housing, enhances sustainability while reducing reliance on fossil fuels. This approach ensures energy efficiency, making cold storage operations more environmentally friendly and faster build up.



Lowest Electric consumption & base on economical aspects



Integrated air blast freezer, anteroom, cold room



Refrigerant Ultra Low Global Warming Potential (**GWP**) & Ozone Depletion Potential (**ODP**)



Super Insulation :
-High density
-Thickness
-Anti bacterial
-Environment friendly



Features : On grid or off grid system available

• SANDWICH PANEL

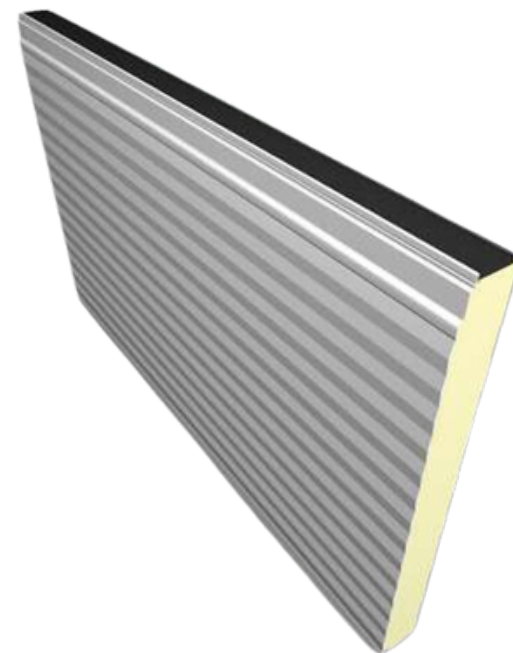
Sandwich Panels are used in a huge variety of building to meet the standards of architects.

Our commercial & industrial wall and roof system offer designers a comprehensive range of building solutions for vertical and horizontal wall applications.

Available in multiple profiles, finishes and color options, trimless ends and cover widths, insulated panels provide customized building design and creative freedom

The panels are easily integrated with traditional construction methods and building systems.

Sandwich Panels insulated wall systems offer superior R-values with unparalleled thermal performance during service life, all build-in to a single off-site factory assembled insulated panel.



ENERGY EFFICIENCY

Because it has an excellent insulation properties from sounds and temperature it can significantly reduces the energy used for electricity especially for air conditioning



GOOD INSULATION

Making your wall(s) and roof(s) cooler which will also increase your productivity inside the building



LOW COST

Efficiency, fast build time, does not require much man power build.



KNOCK DOWN

Has knock down installation system. It can be twaken apart and reassembled with ease to meet the needs of designed/intended layout.



ECO FRIENDLY

Safe for human and environment because it can reduce the usage of woods sugnificantly



NEAT & CLEAN

Neat, clean and hygienic installation, making your building look elegant and modern.

SERVICES

Trusted Services For Continuous Growth

CONSULTATION & DESIGN

We specialize in providing consultation and design services for HVAC systems and energy related matter ensuring each project is optimized for efficiency, cost savings, and system reliability. Our designs are crafted to meet your specific needs, from concept to implementation, with a focus on sustainable performance.

● Expert

TEDES provides expert insights on HVAC system design optimization, energy efficiency strategies, qualification regulatory compliance, and maintenance best practices.

● Guidance

We offer structured guidance to enhance HVAC skills and competencies among your team members.

● Recommendation

TEDES delivers actionable recommendations aimed at improving overall system efficiency and reliability.



SERVICES

Trusted Services For Continuous Growth

OPERATION, MAINTENANCE, AND TRAINING

We provide excellent HVAC System, Operation and Maintenance to ensure optimal performance and functionality at maximum efficiency. This will ensure longer lifetime of your utility facilities and related infrastructure.



OPTIMAL PERFORMANCE

Optimal performance reflects the system's ability to operate effectively in maintaining the set point

MAXIMUM EFFICIENCY

Maximum efficiency focuses on minimizing energy use while achieving optimal output

HVAC ENERGY AUDIT

We provide HVAC Energy Audit to identify opportunities for improving energy efficiency, reducing energy consumption, and optimizing comfort levels for occupants or cooling process.



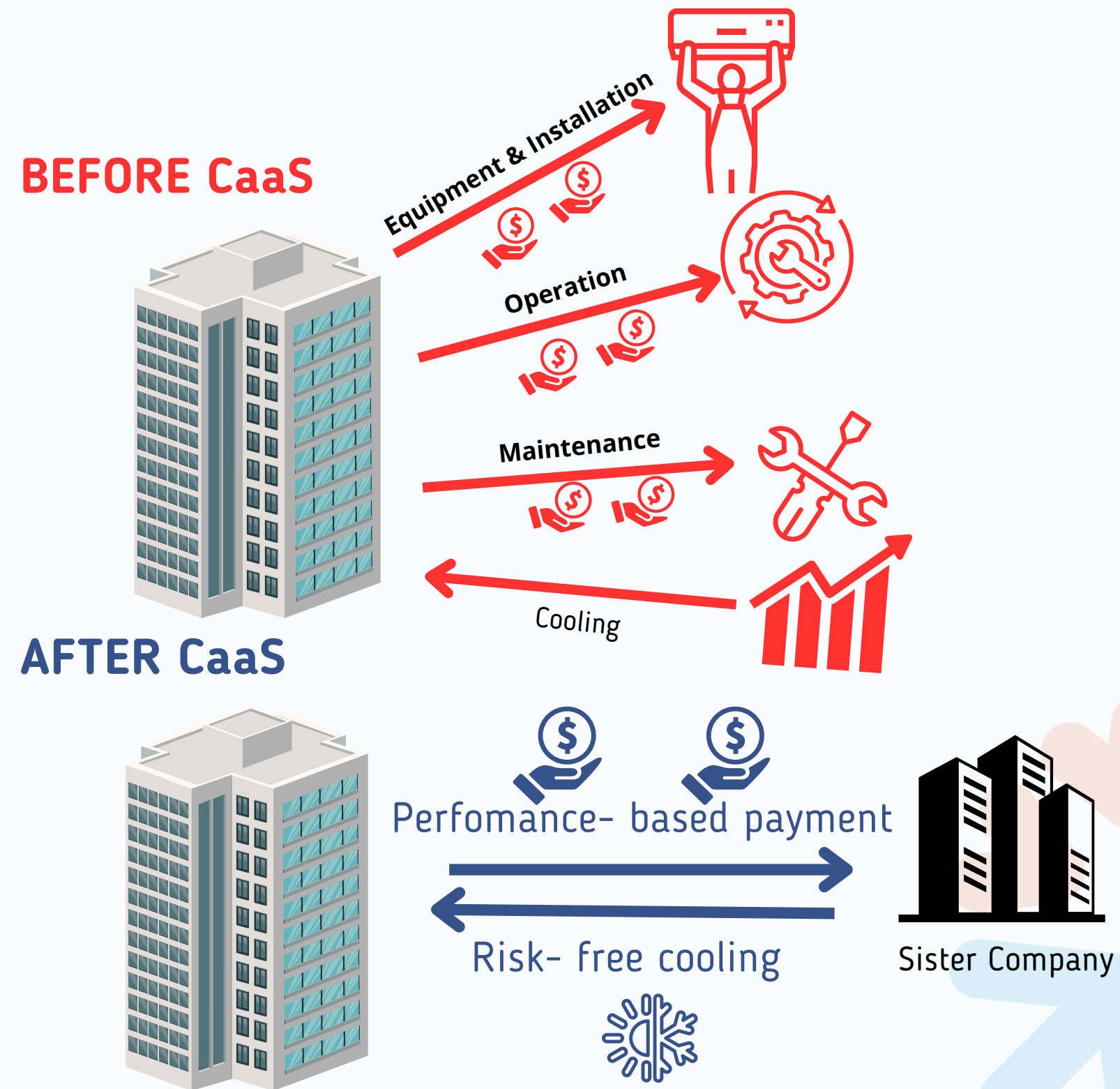
SERVICES

Trusted Services For Continuous Growth

COOLING AS A SERVICE (CaaS)

Our 'sister company' will invest, install, operate, and maintain the cooling system for you fully tailored to your needs by our experts. This means you will benefit from an energy efficient cooling solution without risks.

Our monthly CaaS bills are based on the cooling energy we supply, guarantee lower overall cooling costs while you focus on growing your core business.

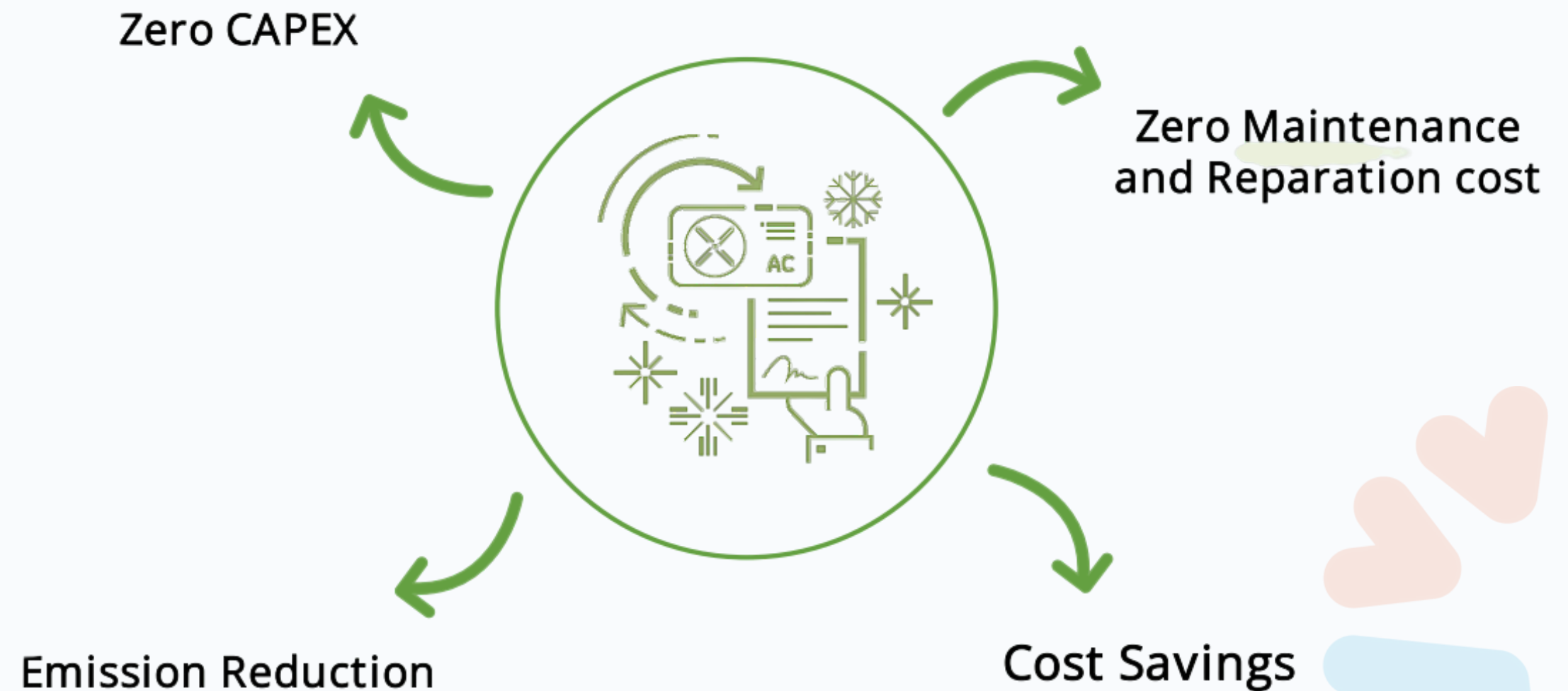


SERVICES

Trusted Services For Continuous Growth

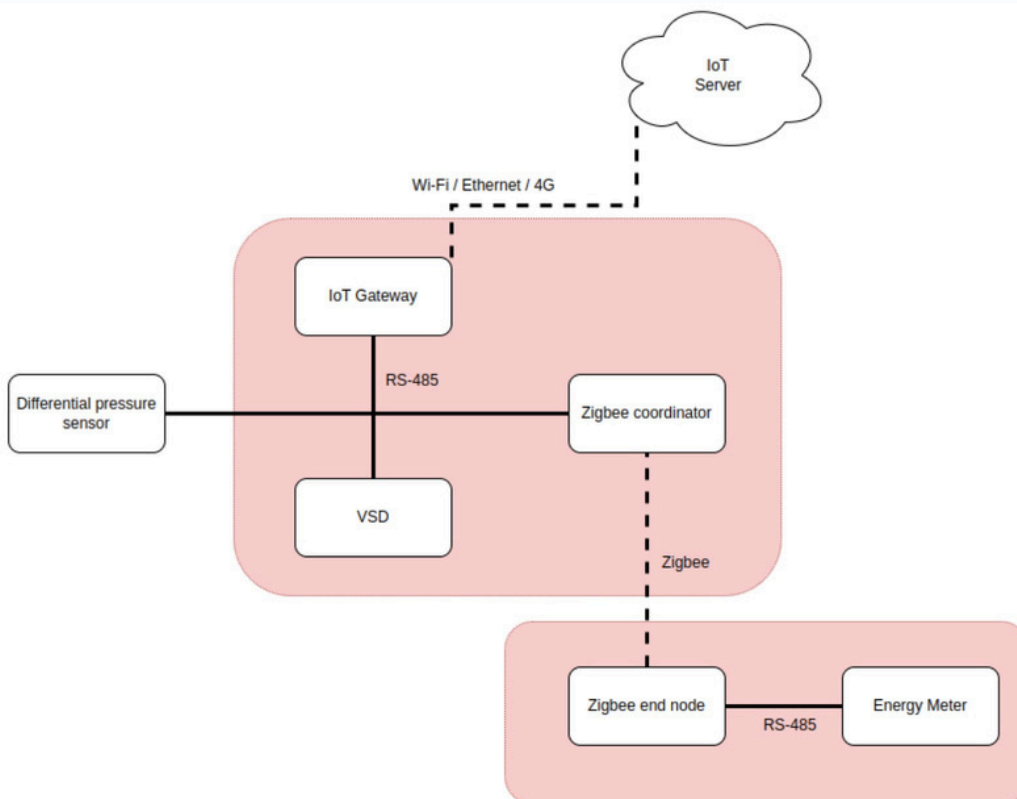
Our cooling as a service (CaaS) scheme enables client to save money on a high performing cooling system without any capital expenditure/upfront cost.

BENEFITS COOLING AS A SERVICE (CaaS)



CASE STUDIES

Creating Eco - Friendly Solutions



HVAC PLANT RECOVERY FROM FIRE DISASTER - WEST JAVA, TEXTILE FACTORY

TEDES and its partners is assisting a large textile factory in West Java to restore its HVAC plant after a fire disaster. By collaborating with HVAC component and sandwich panel manufacturers, TEDES helped the company recover the burned area within 14 days.

OFFICE HVAC RETROFIT WITH HYDROCARBON CHILLER - SOUTH JAKARTA

We assisted One of the Leading Indonesian Oil and Gas Engineering Company to conduct Retrofit and Reengineering of the Company's Head Quarter Office HVAC.

VSD AND COOLING TOWER RETROFIT FOR ONE TEXTILE FACTORY - BOGOR, WEST JAVA

TEDES is assisting Textile Company to conduct Energy Efficiency in the chiller and production machines with the help Online Monitoring System and replacing Cooling Tower and install VSD in their machinery motors.

CASE STUDIES

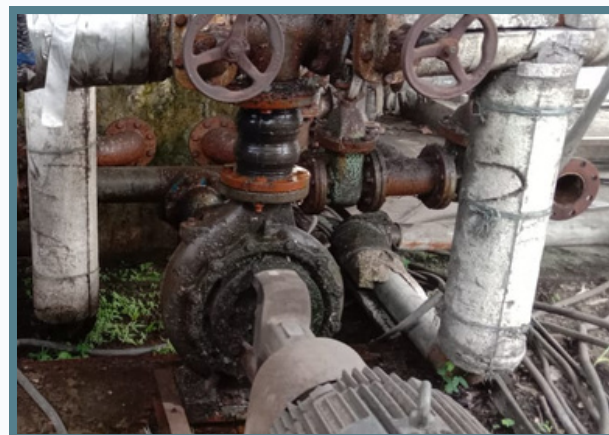
Creating Eco - Friendly Solutions

• CHILLER RETROFIT FOR PP FILM FACTORY - WEST JAVA, BEKASI

A large-scale PP Film factory with high cooling demands faced massive electricity costs and unstable temperature. TEDES assisted the 40+ year-old factory, in retrofitting and reengineering its chiller plant, and increase its production capacity throughput.

1. CHILLER PLANT AUDIT

=> TEDES conducted a field survey to audit the existing Chiller Plant and indentify problems.



Flow	Head [m]	Machine	Basin	Pump
104	US GPM	104	104	104
105	US GPM	105	105	105
106	US GPM	106	106	106
107	US GPM	107	107	107
108	US GPM	108	108	108
109	US GPM	109	109	109
110	US GPM	110	110	110
111	US GPM	111	111	111
112	US GPM	112	112	112
113	US GPM	113	113	113
114	US GPM	114	114	114
115	US GPM	115	115	115
116	US GPM	116	116	116
117	US GPM	117	117	117
118	US GPM	118	118	118
119	US GPM	119	119	119
120	US GPM	120	120	120
121	US GPM	121	121	121
122	US GPM	122	122	122
123	US GPM	123	123	123
124	US GPM	124	124	124
125	US GPM	125	125	125
126	US GPM	126	126	126
127	US GPM	127	127	127
128	US GPM	128	128	128
129	US GPM	129	129	129
130	US GPM	130	130	130
131	US GPM	131	131	131
132	US GPM	132	132	132
133	US GPM	133	133	133
134	US GPM	134	134	134
135	US GPM	135	135	135
136	US GPM	136	136	136
137	US GPM	137	137	137
138	US GPM	138	138	138
139	US GPM	139	139	139
140	US GPM	140	140	140
141	US GPM	141	141	141
142	US GPM	142	142	142
143	US GPM	143	143	143
144	US GPM	144	144	144
145	US GPM	145	145	145
146	US GPM	146	146	146
147	US GPM	147	147	147
148	US GPM	148	148	148
149	US GPM	149	149	149
150	US GPM	150	150	150
151	US GPM	151	151	151
152	US GPM	152	152	152
153	US GPM	153	153	153
154	US GPM	154	154	154
155	US GPM	155	155	155
156	US GPM	156	156	156
157	US GPM	157	157	157
158	US GPM	158	158	158
159	US GPM	159	159	159
160	US GPM	160	160	160
161	US GPM	161	161	161
162	US GPM	162	162	162
163	US GPM	163	163	163
164	US GPM	164	164	164
165	US GPM	165	165	165
166	US GPM	166	166	166
167	US GPM	167	167	167
168	US GPM	168	168	168
169	US GPM	169	169	169
170	US GPM	170	170	170
171	US GPM	171	171	171
172	US GPM	172	172	172
173	US GPM	173	173	173
174	US GPM	174	174	174
175	US GPM	175	175	175
176	US GPM	176	176	176
177	US GPM	177	177	177
178	US GPM	178	178	178
179	US GPM	179	179	179
180	US GPM	180	180	180
181	US GPM	181	181	181
182	US GPM	182	182	182
183	US GPM	183	183	183
184	US GPM	184	184	184
185	US GPM	185	185	185
186	US GPM	186	186	186
187	US GPM	187	187	187
188	US GPM	188	188	188
189	US GPM	189	189	189
190	US GPM	190	190	190
191	US GPM	191	191	191
192	US GPM	192	192	192
193	US GPM	193	193	193
194	US GPM	194	194	194
195	US GPM	195	195	195
196	US GPM	196	196	196
197	US GPM	197	197	197
198	US GPM	198	198	198
199	US GPM	199	199	199
200	US GPM	200	200	200

2. ANALYZE & CALCULATE

=> TEDES conducted an analysis to find solutions related to the Chiller Plant problems found during the survey and performed design calculations according to the Chiller Plant requirements.

Chiller Plant	Label	Machine/ Load	Nomor Basin	Brand	TR Chiller	No. Chiller	Status (On/Off/Backup)	EFFICIENCY											
								Chiller Efficiency			CHWP Efficiency		CWP Efficiency		CT Efficiency		CHILLER PLANT EFFICIENCY		ΔT evap (°C)
								Total kW	TR	kW/TR	kW Consum	kW/TR	kW Consum	kW/TR	kW Consum	kW/TR	kW/TR	kW/TR	
1	Extrusion 01	MHI 1	81	HITACHI			OFF												
	Extrusion 02	EGAN 1	81				OFF												
	Extrusion 03	EGAN 2	81				OFF												
2	Extrusion 04	SML 1 & EREMA 3	80	HITACHI	500	CHILLER 1	ON	181.87	269.79	0.67	48.83	0.18	44.35	0.16	7.94	0.03	1.05	3.00	
			82	HITACHI	120	CHILLER 4	OFF												
3	Extrusion 05	SML 2	83	HITACHI	120	CHILLER 5a	ON	68.04	127.34	0.53			29.78	0.23	4.86	0.04	1.06	5.90	
		14 AHU 7 AHU Panel		HITACHI	120	CHILLER 5b	ON	91.44	127.34	0.72	32.76	0.26	26.52	0.21	1.84	0.01	0.94	5.90	

SUPPLY PIPE GALVANIZED																		
Line	Keterangan	Head	Water Flow	Diameter	Length	Total Length	Velocity	Head Loss	Pressure Drop	Pressure Drop	Pressure Drop Unit	Pressure Drop Accumulation	ELBOW	TEE				
		m	M³/h	inch	m	ft	ft/s	ft/100 ft	ft/100 ft	ft/100 ft	m	m	90	45	6"	8"	10"	12"
			GPM															
1	MHI 1	35	60	264	4"	35.50	116.47	85.50	280.51	6.65	3.896	10.93	3.33	343.35	35.00	18.31	5	
2	EGAN 2	60	81	356	5"	16.50	54.13	66.50	218.18	5.71	2.214	4.83	1.47	588.60	60.00	16.45	5	
3	1+2			620	6"	35.80	117.45	65.80	215.88	6.89	2.52	5.44	1.66	0.00	0.00		1	
4	EGAN 1	60	86	378	5"	5.60	18.37	45.60	149.61	6.06	2.478	3.71	1.13	588.60	60.00	14.45	4	
5	3+4			999	8"	13.00	42.65	23.00	75.46	6.41	1.576	1.19	0.36	0.00	0.00		1	
6	SML 1	60	90	396	5"	5.60	18.37	45.60	149.61	6.35	2.706	4.05	1.23	588.60	60.00	14.19	4	
7	5+6			1395	8"	30.00	98.42	60.00	196.85	8.95	2.972	5.85	1.78	0.00	0.00		2	
8	SML 2	60	96	422	5"	5.50	18.04	45.50	149.28	6.77	3.051	4.55	1.39	588.60	60.00	12.56	4	
9	7+8			1817	10"	14.00	45.93	24.00	78.74	7.39	1.571	1.24	0.38	0.00	0.00		1	
10	MHI 2	55	122	537	6"	5.50	18.04	45.50	149.28	5.96	1.921	2.87	0.87	539.55	55.00	11.67	4	
11	9+10			2354	10"	17.00	55.77	27.00	88.58	9.58	2.573	2.28	0.69	0.00	0.00		1	
12	BTF 1	50	90	396	5"	5.50	18.04	45.50	149.28	6.35	2.706	4.04	1.23	490.50	50.00	11.33	4	
13	11+12			2750	10"	85.00	278.87	105.00	344.49	11.19	3.467	11.94	3.64	0.00	0.00		1	
14	TANGO	55	54.9	242	4"	20.50	67.26	70.50	231.30	6.1	3.306	7.65	2.33	539.55	55.00	13.94	5	
15	GULDEN	55	58.5	257	4"	6.15	20.18	56.15	184.22	6.48	3.703	6.82	2.08	539.55	55.00	13.69	5	
16	14+15			499	6"	32.00	104.99	42.00	137.79	5.54	1.673	2.31	0.70	0.00	0.00		1	
17	RABIT K5000-3350	98	58.5	257	4"	6.15	20.18	56.15	184.22	6.48	3.703	6.82	2.08	961.38	98.00	12.99	5	

CASE STUDIES

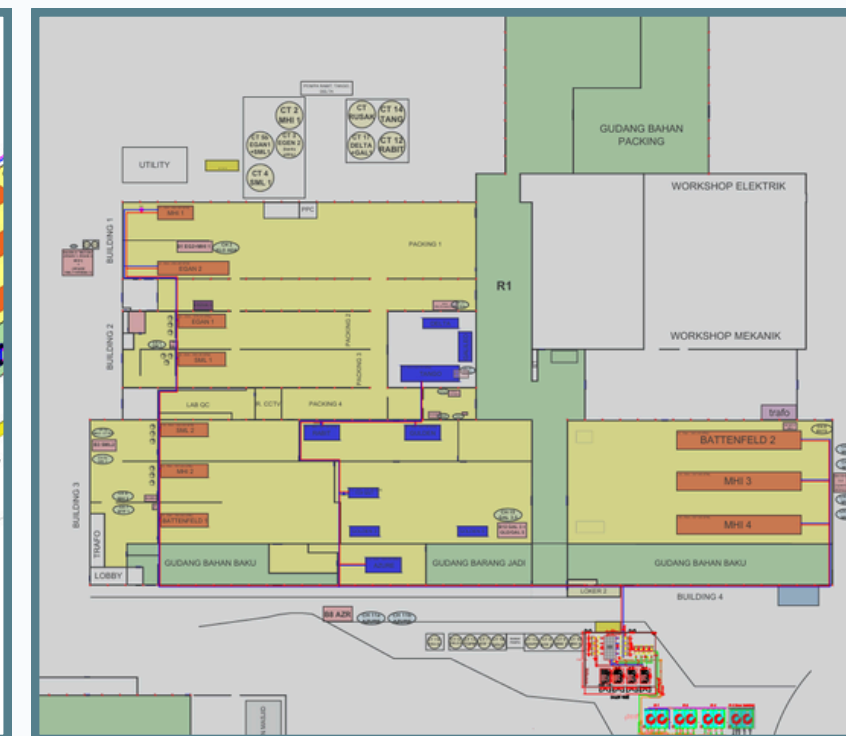
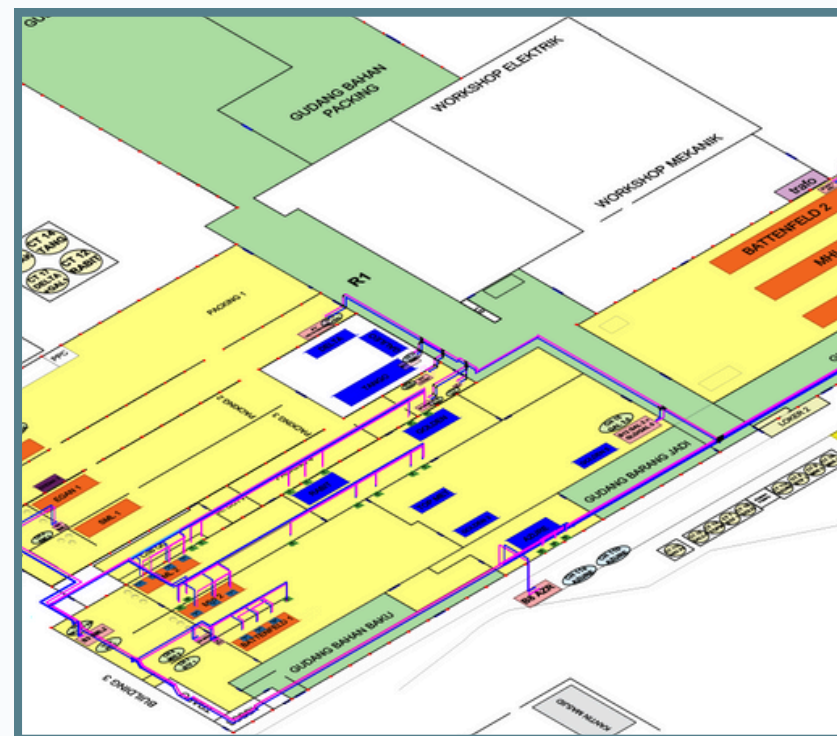
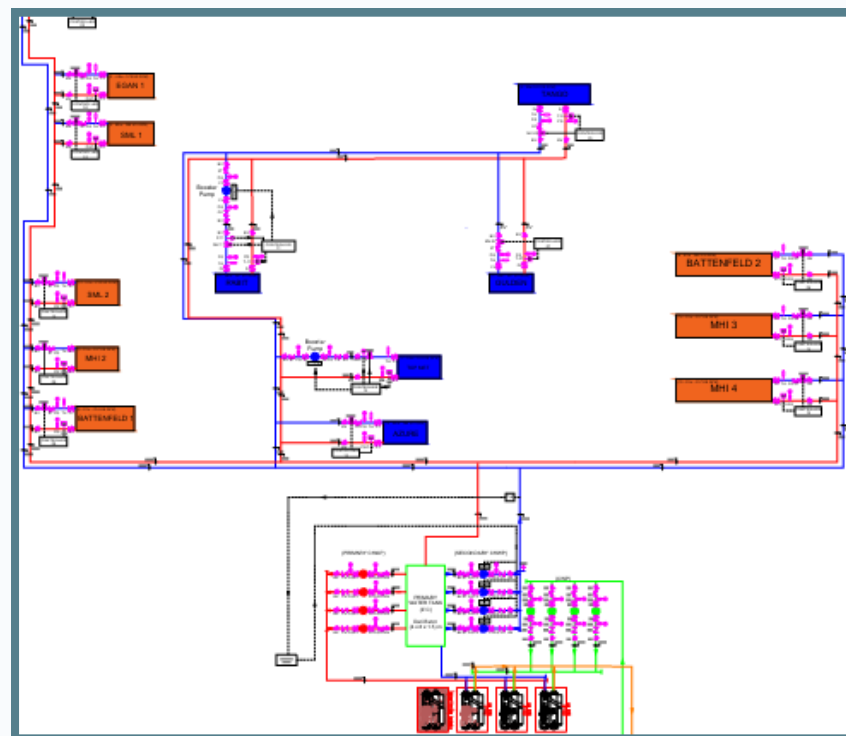
Creating Eco - Friendly Solutions

• CHILLER RETROFIT FOR PP FILM FACTORY - WEST JAVA, BEKASI

A large-scale PP Film factory with high cooling demands faced massive electricity costs and unstable water temperature. TEDES assisted the 40+ year-old factory, in retrofitting and reengineering its chiller plant, and increase its production capacity throughput.

3. HVAC DESIGN & EQUIPMENT SELECTION

=> TEDES design New Centralized Chiller Plant to replace existing chiller units and selected the most suitable chiller system for the customer and the new proposed system could **save more than 50%** energy usage compare to the old system.



CASE STUDIES

Creating Eco - Friendly Solutions

• CHILLER RETROFIT FOR PP FILM FACTORY - WEST JAVA, BEKASI

A large-scale PP Film factory with high cooling water demands faced massive electricity costs and unstable water temperature. TEDES assisted the 40+ year-old factory, in retrofitting and reengineering its chiller plant, and increase its production capacity throughput.

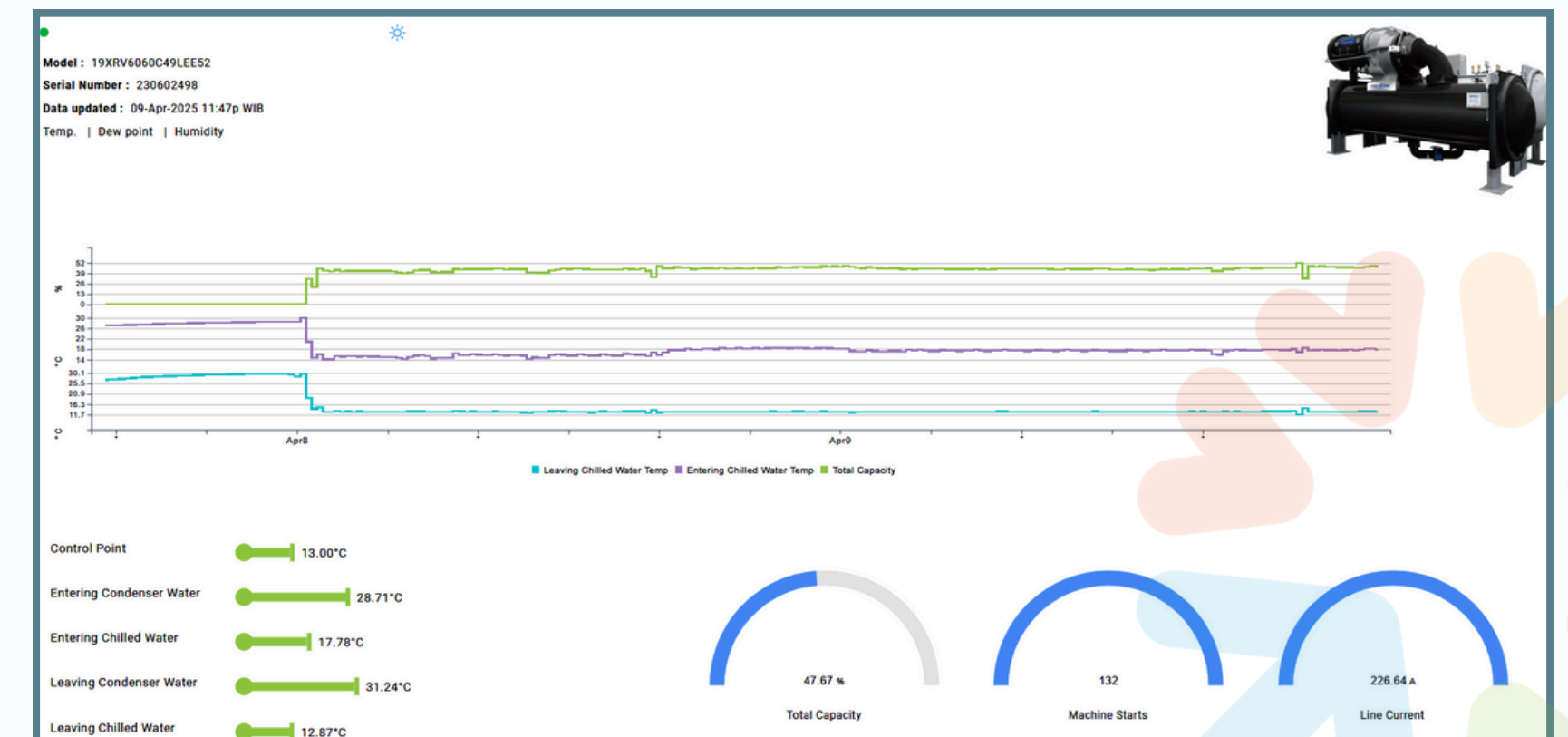
4. IMPLEMENTATION

=> Customer purchased the first chiller and proved that the projected 50% saving could be achieved.



5. MONITORING

=> TEDES monitor the chiller performance while discussing implementation of the completion of the new chiller plant.



CASE STUDIES

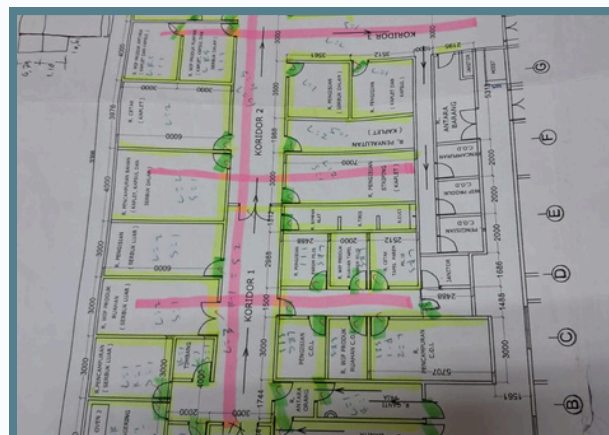
Creating Eco - Friendly Solutions

• COMPLIANCE HVAC SYSTEM TO GOVERMENT REGULATORY FOR HERBAL MEDICINE INDUSTRY - EAST JAKARTA

TEDES is assisting One Herbal medicine factory to improve HVAC system to comply with Government Regulatory (BPOM)

1. HVAC AUDIT

=> TEDES conducted a field survey to audit the existing HVAC system and indentify problems.



2. ANALYZE & CALCULATE

=> TEDES conducted an analysis to find solutions related to the HVAC problems found during the survey and performed design calculations according to the HVAC requirements.

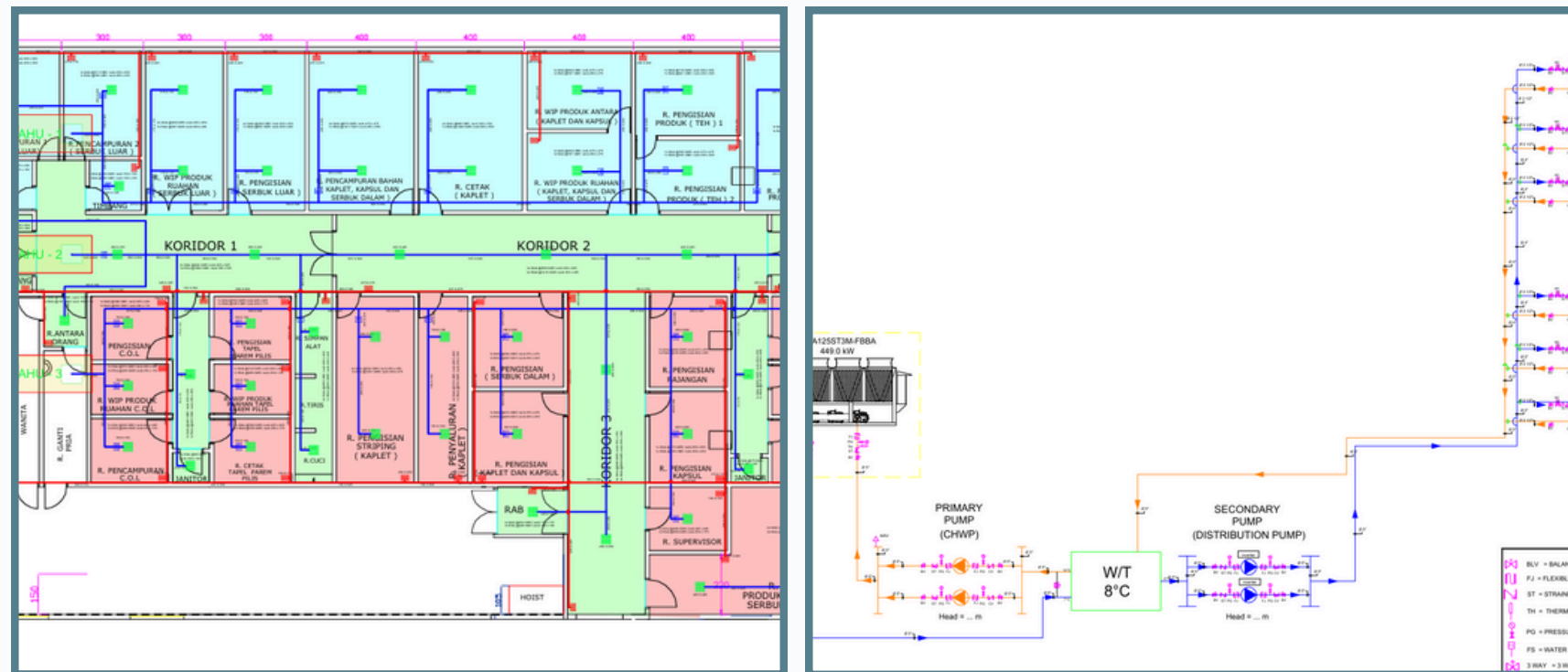
NOMOR RUANGAN	NAMA RUANGAN	Zoning	Room Classification	Room Dimension			BTU	CMH	Ceiling H (m)	Jam Operational Hours	HVAC requirement						
				L (m)	W (m)	A (m2)					Jumlah Titik Lampu	How many Person	Tempera ture	%RH	Pressure	Air Change	can be Monitor/ Control
1102	Ruang Antara Barang		SEKUNDER	1,85	2,34	4,33	4329,00	64,94	3		0	0	25	55	+	5	-
1103	Loker Wanita		SEKUNDER	3,37	1,85	6,23	6234,50	93,52	3		0	10	25	55		5	-
1104	Koridor		PRIMER	11,84	1,85	21,93	23928,00	358,92	3		4	0	25	55	++	5	-
1105	Ruang Proses		PRIMER	10,84	7,35	79,35	75345,00	1130,18	3		8	5	25	55	++	5	OK
1106	Ruang Antara Barang		SEKUNDER	2,34	1,85	4,33	4329,00	64,94	3		1	0	25	55		5	-
1107	Ruang Proses		PRIMER	29,85	4,86	145,00	149001,00	2235,02	3		20	5	25	55	++	5	OK
1108	Ruang Ruahan Cair (area 1)		PRIMER	15,84	4,34	68,75	68745,60	1031,18	3		3	1	25	55	++	5	OK
1108	Ruang Ruahan Cair (area 2)		PRIMER	7,49	4,86	36,40	36401,40	546,02	3		0	1	25	55	++	5	OK
1109	Ruang SPV		SEKUNDER	2,34	2,86	6,69	6692,40	100,39	3		1	2	25	55	++	5	-
1110	Ruang Staging Bahan Pengemas Primer		PRIMER	7,83	1,83	14,33	14328,90	214,93	3		0	6	25	55	++	5	OK
1111	Ruang Panel		PRIMER	7,83	1,83	14,33	14328,90	214,93	3		0	0	25	55		5	-
1112	Ruang Pengisian		PRIMER	13,84	3,83	53,01	53007,20	795,11	3		3	14	25	55	++	5	OK
1113	Ruang Ruahan		PRIMER	17,81	2,86	50,94	50916,40	784,05	3		6	1	25	55	++	5	OK
1114	Ruang Pengisian		PRIMER	15,50	2,86	44,33	44330,00	664,95	3		5	18	25	55	++	5	OK
1115	Ruang Pengemasan Sekunder (area 1)		SEKUNDER	15,35	7,83	120,19	120190,50	1802,86	3		14	50	25	55	+	5	OK
1115	Ruang Pengemasan Sekunder (area 2)		SEKUNDER	3,98	4,86	19,34	19342,80	290,14	3		2	15	25	55	+	5	OK
1116	Tangga		SEKUNDER	4,86	1,85	8,99	8991,00	134,87	3		0	0	25	55		5	-
1117	Ruang Adm.		SEKUNDER	5,86	4,86	28,48	28479,60	427,19	3		0	3	25	55		5	-
1118	Ruang Ruahan		PRIMER	8,52	2,37	20,19	20192,40	302,89	3		2	1	25	55	++	5	OK
1119	Ruang Janitor		SEKUNDER	2,37	2,00	4,74	4740,00	71,10	3		1	1	25	55		5	-
1120	Ruang Ruahan (area 1)		PRIMER	8,52	4,86	41,12	41120,00	616,80	3		0	0	25	55		5	-

AIR FLOW SAG	LUAS PENAMPANG DIBUTUHKAN	Jumlah PER RUANGAN	AIR FLOW SAG PER UNIT	AIR FLOW SAG PER UNIT	LUAS PENAMPANG PER UNIT	DIMENSI SAG PER UNIT	Size SAG	LUAS PENAMPANG DIBUTUHKAN	Jumlah PER RUANGAN	AIR FLOW SAG PER UNIT	DIMENSI SAG PER UNIT	Size SAG	Airflow	Luas Penampang	Dimensi Ducting (mm) rumus	Dimensi Ducting (mm) pakai
0,25	0,10	1,00	887	0,25	0,10	0,31	300 x 300	0,09	1,00	798	0,25	0,35	250 x 350			
0,09	0,03	1,00	215	0,09	0,03	0,19	200 x 200	0,03	1,00	283	0,25	0,13	250 x 150			
0,14	0,06	1,00	511	0,14	0,06	0,24	250 x 250	0,05	1,00	459	0,25	0,20	250 x 200			
0,00	0,00	1,00	0	0,00	0,00	0,00	0,00	0,00	1,00	0	0,25	0,00				
0,00	0,00	1,00	0	0,00	0,00	0,00	0,00	0,00	1,00	0	0,25	0,00				
0,17	0,07	1,00	611	0,17	0,07	0,26	250 x 250	0,06	1,00	500	0,25	0,24	250 x 250			
0,06	0,02	1,00	209	0,06	0,02	0,15	150 x 150	0,02	1,00	188	0,15	0,14	150 x 150			
0,05	0,02	1,00	175	0,05	0,02	0,14	150 x 150	0,02	1,00	158	0,15	0,12	150 x 125			
0,00	0,00	1,00	0	0,00	0,00	0,00	0,00	0,00	1,00	0	0,25	0,00				
0,28	0,11	2,00	489	0,14	0,06	0,24	250 x 250	0,10	1,00	897	0,25	0,40	250 x 400			
0,28	0,11	2,00	489	0,14	0,06	0,24	250 x 250	0,10	1,00	897	0,25	0,40	250 x 400			
0,51	0,21	2,00	924	0,26	0,10	0,32	325 x 325	0,18	1,00	1663	0,35	0,53	350 x 550			
0,11	0,04	1,00	286	0,11	0,04	0,21	225 x 225	0,04	1,00	288	0,25	0,16	250 x 175			
0,09	0,03	1,00	315	0,09	0,03	0,19	200 x 200	0,03	1,00	283	0,25	0,13	250 x 150			
0,11	0,04	1,00	403	0,11	0,04	0,21	225 x 225	0,04	1,00	363	0,25	0,16	250 x 175			
0,12	0,05	1,00	446	0,12	0,05	0,22	250 x 250	0,04	1,00	402	0,25	0,18	250 x 200			
0,03	0,01	1,00	96	0,03	0,01	0,08	100 x 100	0,01	1,00	96	0,25	0,05	100 x 100			
0,11	0,04	1,00	384	0,11	0,04	0,21	225 x 225	0,04	1,00	355	0,25	0,16	250 x 175			
0,09	0,03	1,00	312	0,09	0,03	0,19	200 x 200	0,03	1,00	280	0,25	0,12	250 x 125			
0,11	0,04	1,00	389	0,11	0,04	0,21	225 x 225	0,04	1,00	359	0,25	0,16	250 x 175			
0,37	0,15	2,00	673	0,19	0,07	0,27	275 x 275	0,13	1,00	1211	0,25	0,54	250 x 550			

Creating Eco - Friendly Solutions

TEDES is assisting One Herbal medicine factory to improve HVAC system to comply with Goverment Regulatory (BPOM)

=> TEDES created HVAC design drawings dan selected the most suitable HVAC system for the customer to comply with government regulation.



=> TEDES will do the procurement, construction up to testing and commissioning of the system. Based on customer's request we also will help them on the civil works and lighting as one package.

=> As an option TEDES could provide operation and maintenance the whole system, so customer could focus on their main core business.

CASE STUDIES

Creating Eco - Friendly Solutions

• HVAC AND CHILLER RETROFIT SUPERMALL IN BEKASI AREA

TEDES is supporting a Supermall in Bekasi area doing retrofing 30 years old Air Conditioning System to have better performance for cooling the common area and at the same time reducing electricity cost.

1. HVAC AUDIT

=> TEDES conducted an audit of the existing HVAC system and carried out an identification and condition check of the mall.



2. ANALYZE & CALCULATE

=> TEDES identified the existing units and performed calculations to estimate energy savings based on the current usage, as well as conducted piping calculations.

Existing	Proposed	Saving	kWh/Day	kWh/Year	Rupiah/Year	Rupiah/kWh
TOTAL Watt 2,916,588	1808,48 Kw	886,49 Load Factor 0,8	10,638 Operating hours (10.00-22.00)	3,829,637 Operating Days/year (360)	Rp 3,966,661,526,87	Rp 1,035,78
COP 3,412 (total btuh/3,412)/kw total 2,908						
3,516						
KW/ TR (3,516/ COP)	Existing AC Efficiency	Proposed Chiller				
1,209		0,75				

SUPPLY		LANTAI		TOTAL LOAD	AIR FLOW	WATER FLOW	CONNECTION	Diameter	Length	Total Length	Pressure Drop	Pressure Drop	Pressure Drop Unit
				kW	CMH	GPM	INCH	inch	m	ft	ft/100 ft	m	Kpa
163	Koridor Timur 1			43,23	10,827	45,49	1 1/4"	2 1/2"	19,33	63,42	39,33	129,04	2,10
164	Koridor Timur 2			43,23	10,827	45,49	1 1/4"	2 1/2"	3,56	11,68	23,56	77,30	1,26
AA	K. Tim 1+ K.Tim 2			90,97			3"		6,55	21,49	16,55	54,30	0,60
150	Food Court			178,10	29,750	134,31	2 1/2"	4"	13,28	43,57	43,28	141,99	1,56
AB	AA+Foodcourt			225,28			4"		17,73	58,17	27,73	90,98	1,00
159	Koridor atrium utama 1			43,23	10,827	45,49	1 1/4"	2 1/2"	3,09	10,14	23,09	75,76	1,23
AC	AB+K. ATRIUM UTAMA 1			270,77			5"		6,37	20,90	16,37	53,71	0,71
X-8	WCP ATRIUM UTAMA			43,23	10,827	45,49	1 1/4"	2 1/2"	2,90	9,51	22,90	75,13	1,22
AD	AC+ X-8			316,26			5"		5,86	19,23	15,86	52,03	0,92
160	Koridor atrium utama 2			43,23	10,827	45,49	1 1/4"	2 1/2"	3,78	12,40	23,78	78,02	1,27
X-5	WCP KORIDOR BARAT 1			43,23	10,827	45,49	1 1/4"	2 1/2"	4,83	15,85	24,83	81,46	1,33
AE	K. ATRI UTAMA 2 + X-5			90,97			3"		6,55	21,49	16,55	54,30	1,09
AF	AD+AE			407,23			5"		15,79	51,80	25,79	84,61	2,41
161	Koridor Barat 1			43,23	10,827	45,49	1 1/4"	2 1/2"	3,78	12,40	23,78	78,02	1,27

CASE STUDIES

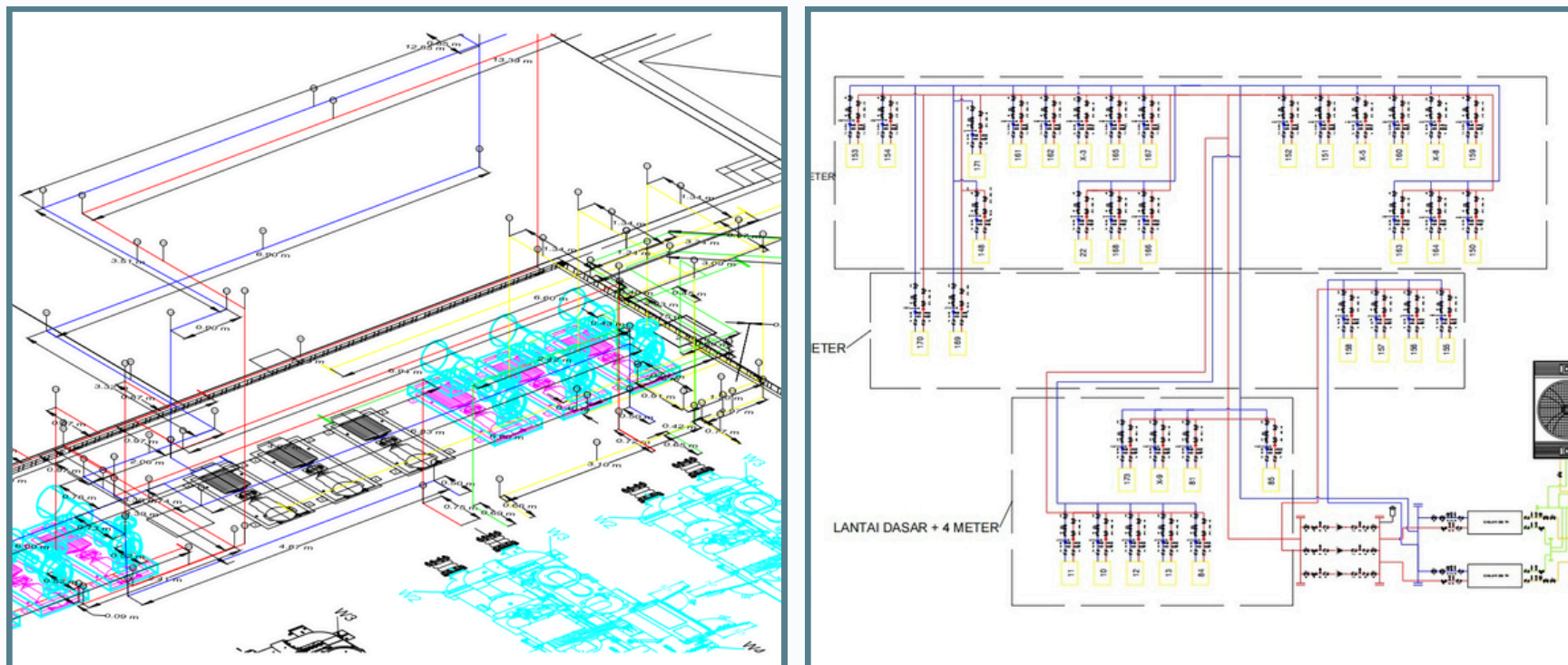
Creating Eco - Friendly Solutions

• HVAC AND CHILLER RETROFIT SUPERMALL IN BEKASI AREA

TEDES is supporting a Supermall in Bekasi area doing retrofitting 30 years old Air Conditioning System to have better performance for cooling the common area and at the same time reducing electricity cost.

3. HVAC DESIGN & EQUIPMENT SELECTION

=> The new system will be able to achieve approximately 35% power saving compare to the existing system. The new system also will require less maintenance and easier operation.



4. IMPLEMENTATION

=> TEDES will do the procurement, construction up to testing and commissioning of the system.

5. OPERATION & MAINTENANCE

=> As an option TEDES could provide operation and maintenance the whole system, so customer could focus on their mall operation.

OUR PARTNERS



THANK YOU

**PT. TERMODINAMIKA
ENERGI SELARAS**

Jl. Cortes 03 Blok B20 No.15, Jababeka, Simpangan,
Cikarang Utara, Bekasi, Jawa Barat 17530
(+62) 82334247120 | 021-38725125
info@tedes.co.id

