CITTA' DI TORINO
Divisione Servizi Culturali
Settore Edifici per la Cultura
Via San Francesco da Paola n. 3
10123 Torino

PROGETTO DI RESTAURO E RIQUALIFICAZIONE FUNZIONALE DI VILLA AMOSETTI ED ARANCIERA DEL PARCO REGINA, Via Filadelfia, n. 205, Torino

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AS-BUILT | NUOVO PADIGLIONE

TITOLO: IMPIANTI FLUIDOMECCANICI SOTTOCENTRALE

Schemi funzionali

FILE: 0201L_TOQ(ai9a)
SETTORE:EDIFIC/IMP.ORG
SCALA: -

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IMPRESA ESECUTRICE

CMS

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Il direttore
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N.	GIO/GIO/AN	AS-BUILT	Tecnico	Data	Grafico	Data
Rev. N.	Data	Descrizione	Esecu.	Data	Appro.	

SIMBOLOGIA

- Collegamento al modulo perifetico di gestione e controllo.
- Termometro a quadrante con fondo scala e 120°C per fluidi caldi, 50°C per aria e 30° per acqua refrigerata.
- Manometro completo di rubinetto portamanometro e flangiato di prova.
- Trasmettitore di temperatura ed immersione con guaina
- Valvola di intercettazione:
  - del tipo a farfalla, in ghisa, PN16, con monoflangia di smorzaggio, per diametri uguali o superiori a DN65
  - del tipo a sfera, in ghisa sferoidale, PN16, in oliona e monoconi, per diametri uguali od inferiori a 2"
- Filtro a cestello in bronzo con attacchi filettati per diametri uguali o inferiori a 2" e in ghisa con attacchi a flange per diametri uguali o superiori a DN65
- Valvola di ritegno tipo universale in ghisa con attacchi filettati per diametri uguali o inferiori a 2" e in ghisa con corpo e coperchio con attacchi a flange per diametri uguali o superiori a DN65
- Compensatore elastico flangiato, in gomma con rinforzi in acciaio
- Valvola di intercettazione a farfalla tipo a "wafer" in ghisa con attacchi a flange per diametri uguali o superiori a DN65 e in ghisa con attacchi a flange per diametri uguali o superiori a DN65
- Riduttore di pressione per gruppi di riempimento impianti
- Valvola a sfera diametro 1/2" per scarico impianti
- Valvola automatica di sfiato aria diametro 1/2", completa di valvola a sfera di intercettazione
- F.C. — Tubazione acqua calda
- R.C. — Tubazione ritorno acqua calda
- A.C. — Tubazione acqua refrigerata
- R.A. — Tubazione ritorno acqua refrigerata
- A.A. — Tubazione acqua alimentazione

1 Sistema perfetto di centro a logica programmabile DDC, per il controllo e la gestione delle centrali di produzione fluidi caldi e refrigerati, delle centrali di trattamento aria, dei ventilatori di espulsione e ventilatori.
Il sistema DDC, con software di interfacciamento con gli operatori in campo, hardware di comunicazione, software di gestione e controllo dell'intero sistema

2 Refrigeratore d'acqua, monoblocco con condensatori raffreddati ad aria, completo di n° 2 circuiti frigoriferi, n° 2 compressori a vite, n° 2 gruppi pompe a gestione inverter, n° 2 gruppi di pompe Triplex incorporate, Dati tipo con condensatori azionatori a cha e con gas R407c:
- potenza frigorifera 400 kW con aria esterna + 35°C
- potenza frigorifera 307 kW con aria esterna + 35°C e acqua 12/7°C
- potenza assorbita 120 kW
- massima corrente globale assorbita 90 dB(A) a 1 m in campo libero tipo
- 400 V/3ph/50Hz/+N/PE
- Grado di isolamento acustico
- Gruppi di due elettropompe di circolazione acqua refrigerata Prevalenza 30 m.c.a. Portata 70 l/s ciascuna, potenza 15 kW, Prevalenza 15 m.c.a. Portata 70 l/s ciascuna, potenza 7,5 kW
- Quadro elettrico di potenza e comando, potenza 1.100 kW
- Condensatore: Alluminio compresso
- Evaporatore: Acciaio inox
- Incastonato Rail-Fitting
- Supporti antivibranti a molla sotto tutto

3 Trasmettitore di temperatura esterna

4 Scambiatore di calore da vetro al borosilicato, installato a cura della società erogatrice dell'energia, avente indicativamente le seguenti caratteristiche tecniche:
Portata circuito secondario = 40 l/s
Temperatura ingresso circuito secondario = 70,8°C
Potenza termica = 600 kW

5 Gruppo pompe di circolazione acqua calda, circuito primario caldo, con flangiate, portata 70,0 l/s, prevalenza 30 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 2,5 kW.

6 Gruppo pompe di circolazione acqua calda, circuito primario scambiatore, con flangiate, portata 70,0 l/s, prevalenza 30 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 2,5 kW.

7 Gruppo pompe di circolazione acqua calda, circuito secondario scambiatore, con flangiate, portata 70,0 l/s, prevalenza 30 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 2,5 kW.

8 Gruppo pompe di circolazione acqua calda e refrigerata, circuito ventilconvettori "Ala Ricevimenti", con flangiate, portata 0,5 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,55 kW.

9 Gruppo pompe di circolazione acqua calda e refrigerata, circuito ventilconvettori "Ala Ricevimenti", con flangiate, portata 0,5 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,55 kW.

10 Gruppo di circolazione acqua calda e refrigerata, circuito ventilconvettori "Ala Ricevimenti", con flangiate, portata 0,5 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,55 kW.

11 Gruppo pompe di circolazione acqua calda e refrigerata, circuito ventilconvettori "Ala Ricevimenti", con flangiate, portata 0,5 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,55 kW.

12 Gruppo pompe di circolazione acqua calda, circuito batteria preriscaldamento centrali trattamento aria, del tipo in linea, portata 10,0 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,75 kW.

13 Gruppo pompe di circolazione acqua calda, circuito batteria postriscaldamento centrali trattamento aria, del tipo in linea, portata 10,0 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,75 kW.

14 Gruppo pompe di circolazione acqua refrigerata, circuito batteria raffreddamento centrali trattamento aria, del tipo in linea, portata 10,0 l/s, prevalenza 10,0 m.c.a., potenza 380 V, 50 Hz, 50 Hz, 1450 g.r.; massima potenza assorbita 0,75 kW.

15

16 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della temperatura acqua calda e refrigerata e ventilconvettori "Ala Ricevimenti", flangiata, DN40, Kv16

17 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della temperatura acqua calda e refrigerata e ventilconvettori "Aula/Foro Boario", flangiata, DN50, Kv31

18 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della temperatura acqua calda e refrigerata e ventilconvettori "Vivaioni", flangiata, DN40, Kv31

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22 Vaso di espansione a membrana, della capacità di 24 litri, circuito primario caldo, precarica massima di esercizio pari a 5 bar, pressione 1,5 bar.

23 Vaso di espansione a membrana, della capacità di 50 litri, circuito primario scambiatore parzializzato centrali trattamento aria, precarica massima di esercizio pari a 5 bar, pressione 1,5 bar.

24 Vaso di espansione a membrana, della capacità di 50 litri, circuito secondario scambiatore parzializzato centrali trattamento aria, precarica massima di esercizio pari a 5 bar, pressione 1,5 bar.

25 Filtro desoleatore diametro 1"

26 Pompa di caricamento manuale prodotti condizionati.

27

28 Valvola di sicurezza, qualificata (I.S.P.E.S.L., diametro 1", tarata, pressione di taratura 5,5 bar.

29 Valvola di sicurezza, qualificata (I.S.P.E.S.L., diametro 3/4", pressione di taratura 5,5 bar.

30 Unità di trattamento aria primaria "Sala Ricevimenti" con costruzione modulare, telaio di portanti zincato, pannelli sandwich spessore 25 mm poliurethano, ventilatore di mandata con motore a cinghia e puleggia, della portata di 3400 mc/h, prevalenza statica utile alla rete 200 Pa, Sezione filtrante composta da prefiltro a rigenerazione automatica rotativa, con n° 2 pannelli modulanti (zona ad elevata efficienza) Dim. 1000 x 1000 mm, Longitudine 1000 mm, Numero celle 2, velocità nominale cm/ 150 a carica ed alla efficienza
- batteria di preriscaldamento, alimentata con acqua 70°/60°C, area da 0,5 mq
- batteria di raffreddamento e deumidificazione, alimentata con acqua a 7/12°C, area di 27,7 mq a 600 L/h, a 14°C e 88% U.R.
- batteria di post-riscaldamento, alimentata con acqua a portata variabile di ghiaccio
- batteria di post-riscaldamento, alimentata con acqua 80°/70°C, area da 0,5 mq
- sezione ventilante di mandata con ventilatore a cinghia e puleggia, della portata di 3400 mc/h, prevalenza statica utile 400 Pa

31 Valvola sottomagnetica per attivazione sezione umidificazione diametro 1/2"

32 Valvola sottomagnetica per attivazione sezione umidificazione diametro 3/4"

42 Silenziatore a cartti frizzantiscritti da mandata alla chiusura "Sala Ricevimenti" Dim. 1000 x 1000 mm, Lunghezza 1000 mm, Numero celle 2, velocità nominale cm/ 150, Spessore celli 200 mm, Distanza celli 100 mm, Perdita di carico 20 Pa

43 Silenziatore a celli frizzantiscritti da ripresa alla "Sala Ricevimenti" Dim. 1000 x 1000 mm, Lunghezza 1000 mm, Numero celle 2, velocità nominale cm/ 150, Spessore celli 200 mm, Distanza celli 100 mm, Perdita di carico 20 Pa

44 Silenziatore a celli frizzantiscritti da mandata alla "Sala Ricevimenti" Dim. 1000 x 1000 mm, Lunghezza 1000 mm, Numero celli 2, Velocità celli 600 cm/, Spessore celli 200 mm, Distanza celli 100 mm, Perdita di carico 20 Pa

45 Silenziatore a celli frizzantiscritti da ripresa alla "Sala Ricevimenti" Dim. 1000 x 1000 mm, Lunghezza 1000 mm, Numero celli 2, Velocità celli 600 cm/, Spessore celli 200 mm, Distanza celli 100 mm, Perdita di carico 20 Pa

46 Silenziatore a celli frizzantiscritti da mandata alla "Biblioteca" Dim. 1000 x 1000 mm, Lunghezza 1000 mm, Numero celli 2, Velocità celli 600 cm/, Spessore celli 200 mm, Distanza celli 100 mm, Perdita di carico 20 Pa

47 Presezione differenziale per aria

48 Serracomponenti per serranda prima aria esterna, a due posizioni con ritorno a molla

49 Serracomponenti per serranda prima aria esterna su sezione di miscela, modulante con ritorno a molla

50 Serracomponenti per serranda torbido e espulsione su sezione di miscela, modulante

51 Regolatore antigelo, da canale

52 Trasmettitore di temperatura da canale

53 Trasmettitore combinato di temperatura e umidità relativa da canale

54 Trasmettitore di umidità relativa da canale.

55 Sonde di qualità dell'aria da canale.

56 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della batteria di preriscaldamento, flangiata, DN 25, Kv 16

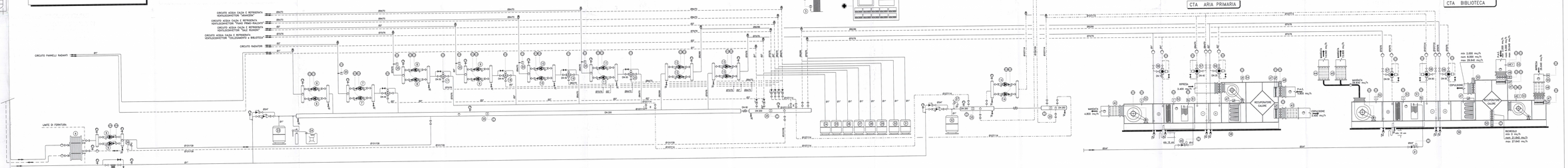
57 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della batteria di raffreddamento e deumidificazione, flangiata, DN 40, Kv 25

58 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della batteria di post-riscaldamento, flangiata, DN 15, Kv 2,5

59 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della batteria di raffreddamento e deumidificazione, flangiata, DN 40, Kv 25

60 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della batteria di post-riscaldamento, flangiata, DN 15, Kv 2,5

61 Valvola motorizzata miscelatrice a tre vie modulante, per la regolazione della batteria di post-riscaldamento, flangiata, DN 25, Kv 21


GRUPPO FRIGORIFERO
CTA ARIA PRIMARIA
CTA BIBLIOTECA
CIRCUITO ACQUA CALDA E REFRIGERATA VENTILCONVETTORI "ARANCIERA"
CIRCUITO ACQUA CALDA E REFRIGERATA VENTILCONVETTORI "PIANO PRIMO-PALLADIO"
CIRCUITO ACQUA CALDA E REFRIGERATA VENTILCONVETTORI "ALA RICEVIMENTI"
CIRCUITO ACQUA CALDA E REFRIGERATA VENTILCONVETTORI "COLLEGAMENTO + BIBLIOTECA"
CIRCUITO RADIATORI
CIRCUITO PANNELLI RADIANTI
LIMITE DI FORNITURA
MANDATA 4.800 mc/h
ESPULSIONE 4.800 mc/h
REGENERATORE ROTORE
MANDATA 3.400 mc/h
ESPULSIONE 3.400 mc/h
MANDATA min 1.000 mc/h nom 8.000 mc/h max 28.640 mc/h
MANDATA min 2.000 mc/h nom 15.000 mc/h max 27.640 mc/h
ESPULSIONE
REGENERATORE ROTORE
DN 200
DN 250
DN 150
DN 100
DN 80
DN 65
DN 50
DN 40
DN 32
DN 25
DN 20
DN 15
Ø125/136
Ø160/170
Ø200/216
Ø250/270
Ø315/334
Ø355/376
Ø400/424
Ø450/476
Ø500/530
Ø560/594
Ø630/668
Ø710/752
Ø800/848
Ø900/954
Ø1000/1060
Ø1120/1188
Ø1250/1326
Ø1400/1484
Ø1600/1696
Ø1800/1908
Ø2000/2120
Ø2240/2374
Ø2500/2650
Ø2800/2968
Ø3150/3339
Ø3550/3763
Ø4000/4240
Ø4500/4770
Ø5000/5300
Ø5600/5936
Ø6300/6678
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Ø8000/8480
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Ø10000/10600
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