

Committee Name: Climate and environment emergency executive panel

Committee Date: 22/03/2022

Report Title: Report of progress on the Installation of an Air Source Heat Pump at City Hall

Portfolio:	Councillor Hampton, Cabinet member for climate change and digital inclusion
Report from:	Head of Strategy, Engagement and Culture
Wards:	All Wards
OPEN PUBLIC ITEM	

Purpose

The purpose of this report is to update the committee on the work underway to install a low carbon heating system at City Hall and to present the future programme of works.

Recommendation:

It is recommended that this work is noted.

Policy Framework

The Council has three corporate priorities, which are:

- People living well
- Great neighbourhoods, housing and environment
- Inclusive economy

This report meets the great neighbourhoods, housing and environment corporate priority

This report addresses *Sustainable City* strategic actions in the Corporate Plan by ensuring *our services mitigate against any adverse effects of climate change and are efficient to reduce carbon emissions.*

Report Details

1. Integrating an Air Source Heat Pump (ASHP) into the existing heating system within City Hall is estimated to deliver up to 43% of the buildings heating requirements using renewable energy, saving up to 104 tonnes of CO₂ per annum. To put this into perspective the average tree absorbs 21kg of CO₂ a year, so the reduction in carbon on this project is equivalent to planting approximately 5000 trees.
2. Installation work has commenced at City Hall with:
 - (a) works in the basement heating plant room taking place to integrate the new heating system into the existing gas heating system
 - (b) the erection of scaffolding to two key aspects of the building to provide access and safety for workers and building occupants
 - (c) the first of several crane lifts taking place to deliver components
3. A briefing with photos of the progress of the installation, *entitled ASHP Progress Briefing*, is appended to this report.
4. A programme of works developed by the contractor is appended to this report, *entitled ASHP Programme of Works*.
5. The c£625k cost of the installation is being wholly met by a grant from central government as part of the Public Sector Decarbonisation Scheme.
6. The installation is due to be completed within the timescale required by the grant scheme.

Consultation

7. Not applicable

Implications

8. This work is on budget and programme and so there are no new implications.

Financial and Resources

9. Not applicable

Legal

10. Not applicable

Statutory Considerations

Consideration	Details of any implications and proposed measures to address:
Equality and Diversity	NA
Health, Social and Economic Impact	NA
Crime and Disorder	NA
Children and Adults Safeguarding	NA
Environmental Impact	This activity demonstrates the Council's commitment to achieving net zero emissions by 2030.

Risk Management

Risk	Consequence	Controls Required
NA	NA	NA

Other Options Considered

11.NA

Reasons for the decision/recommendation

12. NA

Background papers:

Appendices: Appendix 1 ASHP Project Briefing
Appendix 1 ASHP Programme of Works

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Norwich City Hall Air Source Heat pump installation.

Contractor works update.

On the 26 January 2022 the first of several crane lifts was made to deliver the parts required to complete the Air Source Heat pump installation. The parts, including a large buffer vessel were lifted then lowered down the well at the side of City Hall into the Basement plant room ready for installation.



Figure 1 Showing crane lift into City Hall Basement

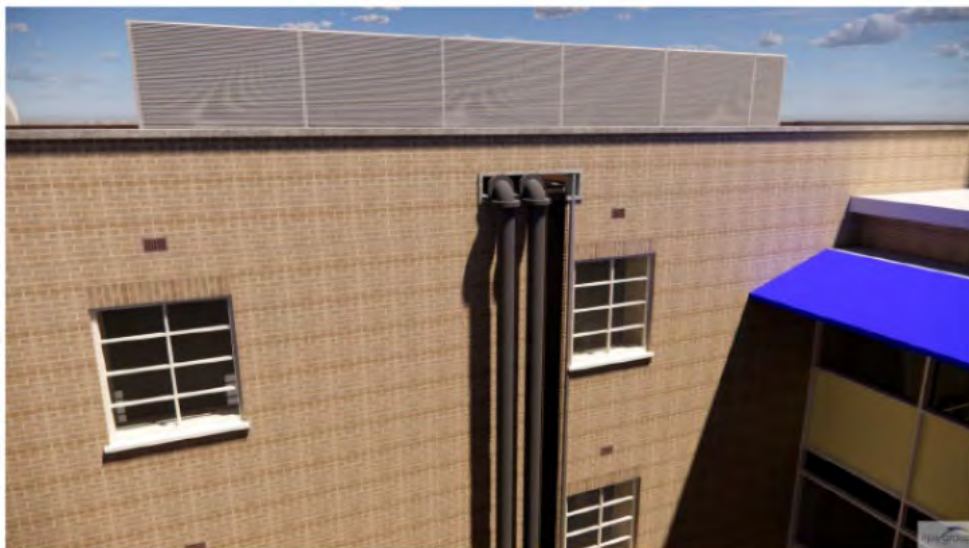
Contractor works update.

Between the 28th January 2022 and 4th February 2022 the installation of the buffer vessel, heat exchange and pipework (flow & return) has taken place within the basement of City Hall.

The pipe work runs up as far as the courtyard where drilling has commenced to route the cables through a hole, then up to the roof.



Proposed 3D View showing Pipe and cable route inside Courtyard



Proposed 3D View showing opening in East facing Courtyard Parapet wall

Contractor works update.

Scaffolding is currently being erected within the courtyard so Unistrut and tray work can be attached to the wall to support the pipework and cabling.



The next step will be drilling the fixing for the Unistrut that will support the tray and pipework. Also cut outs will be made in the parapet wall for the steel frame that supports the Air source heat pumps.

Draft Programme

component availability dependant
Select a period to highlight at right. A legend describing the charting follows.



Norwich City Council - City Hall ASHP Installation

Appendix 2 - ASHP Work Programme

Period Highlight:	1

ACTIVITY - working Hours 07:30 - 22:00

PLAN START
PLAN DURATION
ACTUAL START
ACTUAL DURATION
PERCENT COMPLETE



Planned Duration		
Actual Start		
% Complete		
Actual (beyond plan)		
% Complete (beyond plan)		

Stage	Description
Pre	Development of Installation drawings with NPS
Pre	Production of CPH&SP (CPP)
Pre	Material Procurement to Constructa warehouse
Pre	Development of lifting plans
Pre	Structural engineers design to construction issue
Pre	Steelworks and roof structure procurement
	<u>On site works 03/01/22 - 31/3/22</u>
1	Site Set Up & Welfare
2	Scaffold erection
3	Form penetration under ACM controlled conditions
4	Crane lift with roof protection, steel structure installation. Materials delivery
5	external pipework installation
6	external electric cables installation
7	Main basement plant room materials delivery
8	works in basement plant room
9	Electrical 1st fix
10	Controls 1st fix
11	System integration primary and secondary side
12	pressure test
13	Crane lift: CAHV Units onto steel structure & louvred panels onto roof
14	Install CAHV units and fill heat transfer loop with water (as per NPS Design)
15	Electrics second fix
16	Controls 2nd fix
17	Install Louvred panels & complete plant enclosure
18	Test
19	Insulate pipework
20	Set to work and Commission Heat Pumps / plant
21	Egress crane lift - Clear Site & Remove site set up
22	Demonstration and handover
	<u>Post On site works</u>
Post	Operation and Maintenance manual
Post	Design and Installation schematics

Avg Draft resource allocation		
	Constructa	Specialist
	4	2
	3	5
	2	2