



Air Leakage Test Report

*Block B, Centre for Disabled Studies,
Adult Community College,
Rocheway,
Rochford.*

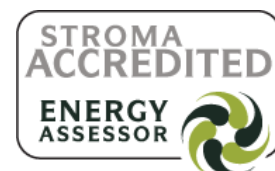
Ref: PPS 10-08-11414 B T2
Issue Date: 19/02/10

Prepared for:
Clive Addison
DCH Construction

Prepared by:
Peter Stratford - Senior Engineer



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Air Leakage Test Report

Introduction

This report relates to the air tightness testing of Block B, Centre for Disabled Studies, Adult Community College, Rocheway required under the Building Regulations Approved Document. The test and subsequent report was carried out on behalf of DCH Construction, in accordance with the required ATTMA TS1 methodology. All measurements were taken on site on 19th February 2010.

Description of Test Procedure

The air leakage characteristics of the structures was determined in accordance with ATTMA TS1, using air depressurisation and pressurisation technique. The air permeability for the building was the mean average of the two test results. Air was supplied to the building at a variety of flow rates to create subsequent pressure differentials between the internal and external environment of the structure.

Air moving equipment was utilised to provide the required airflow, required for the result calculated below. The airflow and pressure differentials were constantly measured and logged.

The air temperature inside and outside was measured, along with the external wind speed.

Test Details

Building: Block B,
Centre for Disabled Studies,
Adult Community College,
Rocheway,
Rochford,
SS4 1DQ

Nett Floor Area, A_F : 210 m²
Envelope Area, A_E : 652 m²

Env. Calc Prepared Tom Sylvester
of Stroma

Env. Calc Verified By: Pete Stratford of Stroma

Year Built: 2010

Test Engineer: Peter Stratford

Customer Clive Addison
Witness:

Test Method: B (Building envelope)

	Pres	Depres
Ave. Wind Speed:	0.2	0.2 ms ⁻¹
Ave. Internal Temp:	7.5	7.3 °C
Ave. External Temp:	3.7	3.6 °C

Test Date: 19/02/2010

Openings & Temporary Sealing

	<i>Response</i>
Temporary seals on external doors/frames	NO
Temporary seals on external door thresholds	NO
Temporary seals on loading bay doors	N/A
Air handling plants sealed	Yes
Temporary seals to smoke exhaust fans	N/A
Temporary seals to boiler room.	N/A
Temporary seals to lift shaft vents/doors	N/A
Temporary seals to windows/cills	NO
Temporary seals to electrical switch room	N/A
Temporary seals to tank room	N/A
Temporary seals to drains, plugs, or overflows	NO
Envelope areas calculated and verified	Yes
All internal doors propped open (excluding cupboard doors)	yes
All building works completed to the air boundary envelope, any missing items note below along with action taken:-	Yes

Interpretation of Results

A regression analysis has been performed to correlate the data and determine the value of C and n. The results were then corrected in accordance with ATTMA TS1 Appendix A to:

1. Correct the reading from the airflow-measuring device for differences between the actual test conditions and the calibrated conditions.
2. Correct for differences in temperature between air passing through the airflow measuring device and air passing through the building envelope.
3. Correct the airflow rates through the building for standard temperature and barometric pressure conditions (STP).

The airflow rate at a pressure differential of 50Pa was determined and this result is expressed as an airflow rate per m² of building envelope. For more information regarding the calculations used to calculate the air permeability or the air leakage index please visit www.stroma.com/downloads/air_permeability_calculation.pdf.

Deviation from Standard Test

None

Results

The initial normalised air flow at a pressure differential of 50 Pascals was established in accordance with the required test methodology of ATTMA TS1.

The key leakage characteristics of the building were calculated as follows:-

Air Permeability Rate @ 50 Pa: 0.34 m³/(hr.m²)

Depressurisation Air Permeability Rate @ 50 Pa: 0.40 m³/(hr.m²)

Effective Leakage Area: 0.01 m² @ 50 Pa
Correlation of results, R²: 0.986
Slope, *n*: 0.76
Air Flow Coefficient, *C_{env}*: 13.1 m³/(hr.Pa^{*n*})
Intercept, *C_L*: 13.2 m³/(hr.Pa^{*n*})

Pressurisation Air Permeability Rate @ 50 Pa: 0.28 m³/(hr.m²)

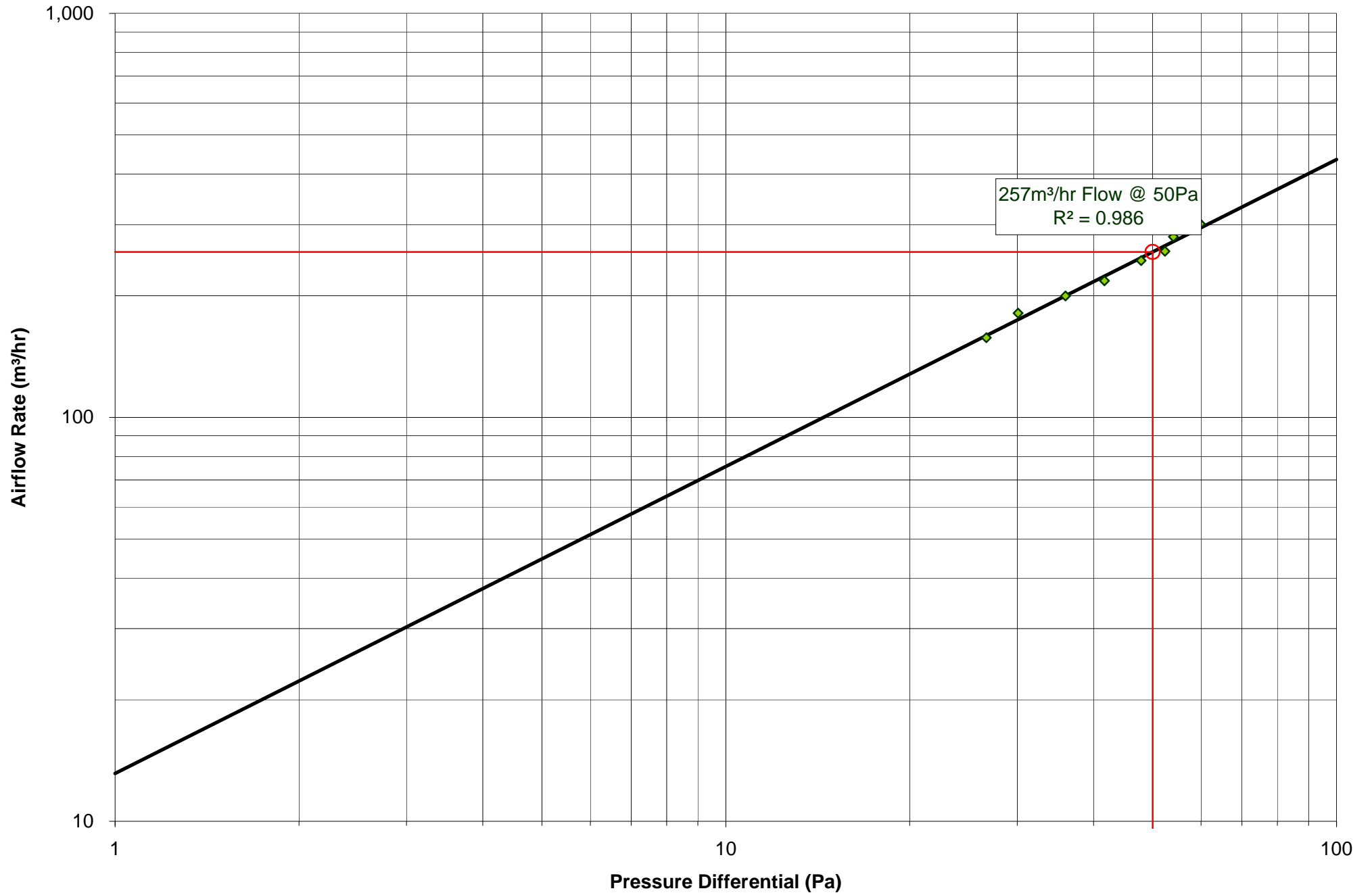
Effective Leakage Area: 0.01 m² @ 50 Pa
Correlation of results, R²: 0.999
Slope, *n*: 0.64
Air Flow Coefficient, *C_{env}*: 15.1 m³/(hr.Pa^{*n*})
Intercept, *C_L*: 15.2 m³/(hr.Pa^{*n*})

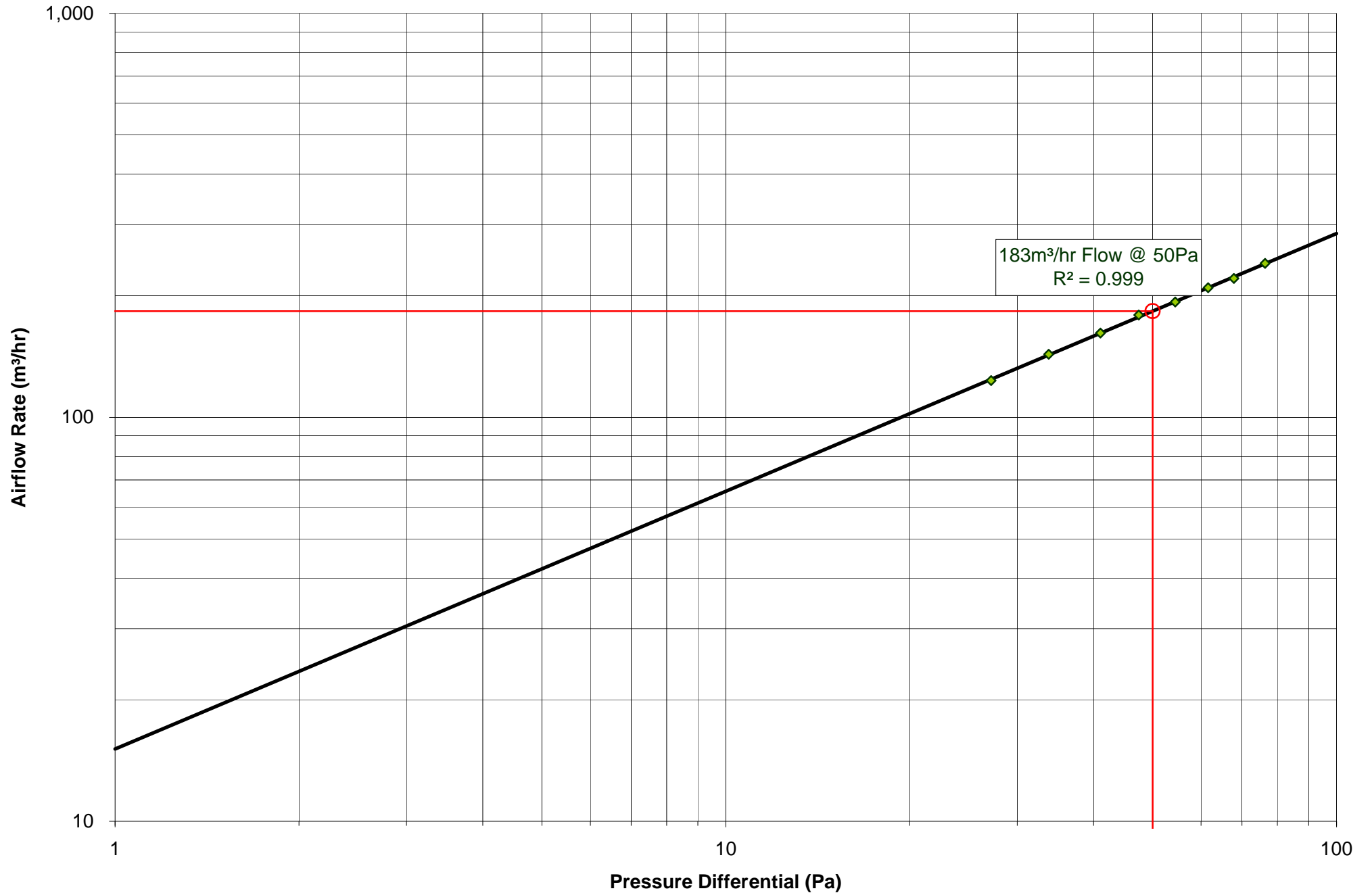
Summary

The building's air leakage rate was checked by means of a depressurisation test and a pressurisation test, which incorporated the entire of the new build envelope. The results attained during this tests were 0.40 m³/(hr.m²) and 0.28 m³/(hr.m²) at an imposed pressure of 50 Pa, when the aforementioned temporary sealing was in place. Therefore the mean average is 0.34 m³/(hr.m²)

This is below the target level of 0.50 m³/(hr.m²) at 50 Pa, required by the carbon emission calculation.

Attached are the test data and graph generated from our test software.







Certificate of Test

In accordance with ATTMA TS1

Building tested: Block B, Centre for Disabled Studies,
Rocheway, Rochford, SS4 1DQ
Company: DCH Construction
Test Date: 19th February 2010

Site Contact: Clive Addison
Certificate No: PPS 10-08-11414 B C2

This is to certify that the above named structure has been tested for air tightness in accordance with ATTMA TS1.

The Key Leakage Characteristics of the building are:

Air Permeability Rate @ 50 Pa: 0.34 m³/(hr.m²)

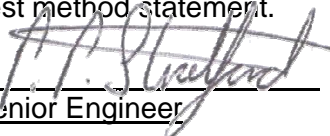
Depressurisation Effective Leakage Area: 0.01 m² @ 50 Pa
Correlation of results, R²: 0.986
Slope, n: 0.76
Air Flow Coefficient, C_{env}: 13.1 m³/(hr.Paⁿ)
Intercept, C_L: 13.2 m³/(hr.Paⁿ)

Pressurisation Effective Leakage Area: 0.01 m² @ 50 Pa
Correlation of results, R²: 0.999
Slope, n: 0.64
Air Flow Coefficient, C_{env}: 15.1 m³/(hr.Paⁿ)
Intercept, C_L: 15.2 m³/(hr.Paⁿ)

Test Parameters:

Envelope Area, A_E: 652 m²
Nett Floor Area, A_F: 210m²
Env. Calc Prepared by: Tom Sylvester of Stroma
Env. Calc Verified by: Pete Stratford of Stroma
Initial Offset Pressure: -1.4 Pa & -0.5 Pa
Final Offset Pressure: -1.1 Pa & -0.6 Pa
Average Inside Temperature: 7.3 °C & 7.5 °C
Average Outside Temperature: 3.6 °C & 3.7 °C

This test certificate should be read in conjunction with the report PPS 10-08-11414 B T2 and associated test method statement.

Signed:  Name: Peter Stratford Date Issued: 19/02/2010
Position: Senior Engineer

On Behalf of Stroma Technology Ltd.