

「CLT等新製品・新技術を用いた建築物の実証実験」

における含水率・温湿度調査 実績報告書

平成29年3月

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1. 目的

木造軸組工法にCLTを床、壁として使用する住宅展示場の建築物について、床下・部屋内・外部の温湿度環境と、環境変化に係る含水率や実使用環境における材料の断熱性能等の影響を確認し、耐久設計へのフィードバックを図るため、エス・バイ・エル・カバヤ株式会社の委託を受けて実施したものである。

2. 実施内容

2.1 温湿度調査

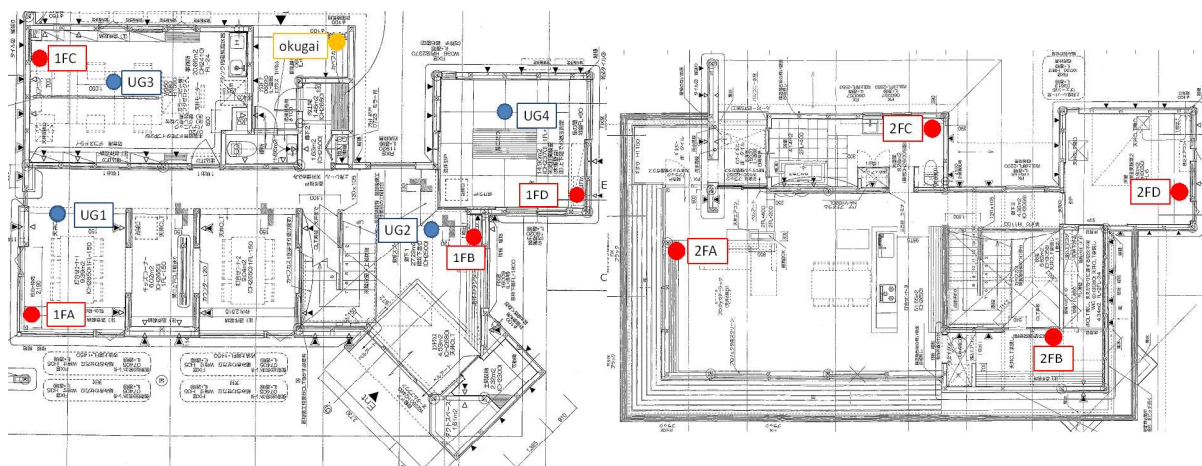
住宅の室内外の温湿度を昨年度設置した温湿度センサー（おんどとり Jr.、RTR-507L、(株)T&D製、写真-1）により調査した。設置箇所は、室内8カ所、床下4カ所、屋外1カ所（第1図）であり、室内外の温湿度は、1時間ごとに記録するように設定し、毎月1回データコレクタ（RTR-500DC、(株)T&D製、写真-2）によりデータを収集した。



写真-1 温湿度センサー



写真-2 データコレクタ



第1図 温湿度センサー設置位置図

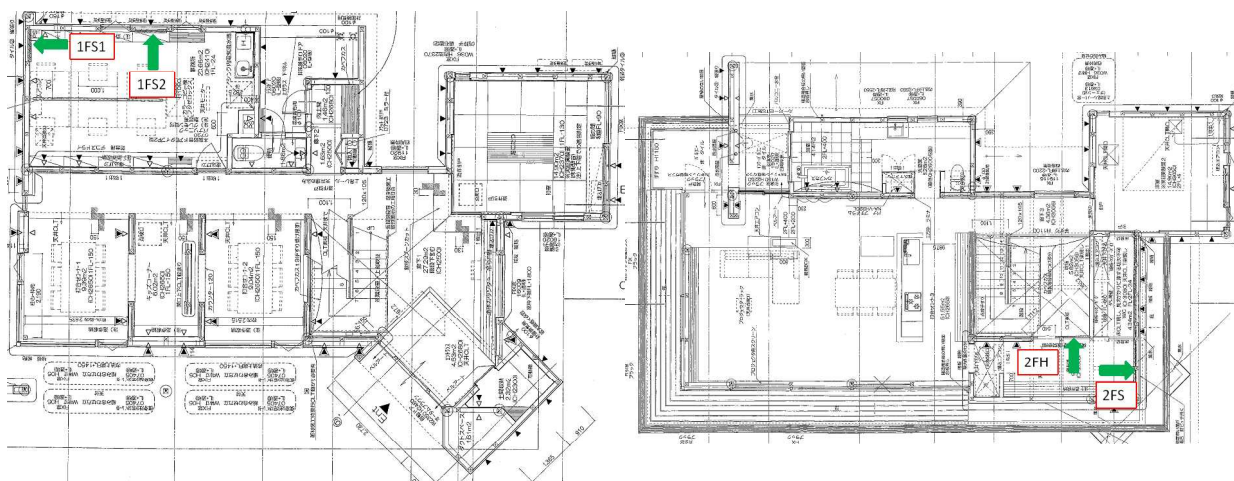
2.2 含水率調査

含水率調査は、高周波木材水分計（HM-520、(株)ケット科学研究所製、写真-3）により、各階のCLT現しの壁面（1階：2カ所、2階：2カ所）を計測した。計測箇所の位置図を第2図に

示す。計測は、毎月1回行った。



写真-3 高周波木材水分計



第2図 含水率計測箇所位置図

2.3 温度調査

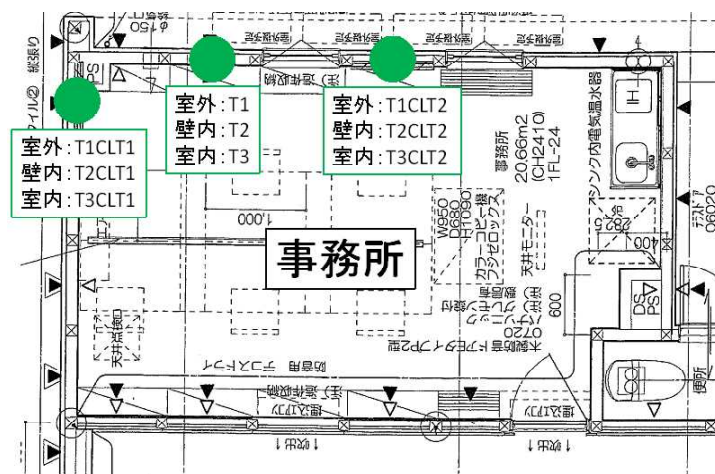
CLTを使用した壁体の温度を計測するため、昨年度設置したフィルムタイプの温度センサー（Pt用フィルム温度センサー、TR-8191-50-10M、株T&D製、写真-4）とデータロガー（おんどとり Jr.、RTR-505-PtL、株T&D製、写真-4）により調査した。設置箇所は、1階事務所の壁面3カ所（第3図、CLT 2カ所、在来工法1カ所）であり、同一位置の室外側壁面、壁体内部、室内側壁面の温度データを10分ごとに記録するように設定し、毎月1回データコレクタ（RTR-500DC、株T&D製、写真-5）によりデータを収集した。



写真-4 温度センサー・データロガー



写真-5 データコレクタ



第3図 温度センサー設置位置図

2.4 熱流調査

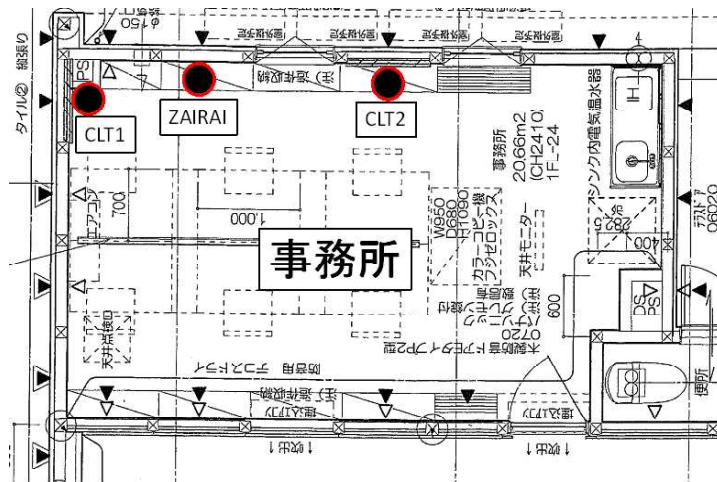
C L Tを使用した壁体の熱流量を計測するため、昨年度設置した熱流計（ヒートセンサー、M-180、英弘精機株製、写真-6）とデータロガー（電圧ロガー、LR5041、日置電機株製、写真-6）により調査した。設置箇所は、1階事務所の壁面3カ所（C L T 2カ所、在来工法1カ所）で温度調査と同一箇所とした。熱流量は10分ごとに記録するように設定し、毎月1回データコレクタ（LR5091、日置電機株製、写真-7）によりデータを収集した。



写真-6 熱流計・データロガー



写真-7 データコレクタ



第4図 熱流計設置位置図

3. 実施結果

3.1 温湿度調査

室内、床下、屋外の月別の温湿度データの集計値を第1表～第3表に示す。
また、各計測箇所における月別の温湿度データの推移を図に示す。

第1表 CLT建築物(カバヤ倉敷北展示場)の温湿度データ(月別・1階)

月	項目	1FA		1FB		1FC		1FD	
		℃	%RH	℃	%RH	℃	%RH	℃	%RH
4月	最小値	14.2	29.8	15.3	27.3	19.2	28.7	15.7	26.6
	平均値	20.1	53.8	21.1	50.4	24.3	43.6	21.3	49.9
	最大値	24.0	67.5	25.7	65.3	27.7	59.5	25.8	64.4
5月	最小値	18.8	32.6	19.3	29.8	22.9	27.4	19.7	32.9
	平均値	23.6	53.1	24.7	48.9	25.9	47.6	25.0	48.0
	最大値	27.9	68.9	29.8	64.4	28.1	66.1	30.1	63.6
6月	最小値	22.8	32.1	23.2	27.3	24.3	30.2	23.4	28.6
	平均値	25.0	62.1	26.1	57.4	27.0	55.0	26.5	55.7
	最大値	28.8	76.7	30.8	70.6	29.2	67.8	30.8	68.1
7月	最小値	22.9	52.8	25.1	37.8	25.2	38.2	25.4	35.9
	平均値	26.0	65.1	27.9	56.4	28.5	58.8	28.6	53.8
	最大値	30.3	73.6	31.8	70.7	33.3	69.3	31.9	67.2
8月	最小値	23.2	50.4	24.4	39.0	26.4	39.5	25.1	36.9
	平均値	27.1	60.0	28.4	53.2	29.2	54.8	28.9	51.2
	最大値	31.3	69.0	32.6	66.9	34.1	65.8	33.1	61.4
9月	最小値	22.4	52.0	23.1	42.3	24.4	47.5	23.1	40.9
	平均値	25.0	65.4	26.1	59.1	27.1	61.1	26.5	57.3
	最大値	28.7	76.1	30.2	70.7	30.2	69.9	30.5	68.0
10月	最小値	18.3	49.5	19.1	44.5	22.4	32.5	19.3	42.4
	平均値	22.9	59.9	23.8	55.0	25.7	50.5	24.1	53.7
	最大値	26.2	76.7	27.7	69.5	28.5	68.1	27.8	67.3
11月	最小値	14.0	37.3	15.1	31.9	18.5	33.2	15.0	34.7
	平均値	19.6	49.0	21.0	44.4	23.8	41.0	20.7	44.8
	最大値	25.5	58.8	27.4	56.2	27.5	53.2	27.0	55.8
12月	最小値	8.8	30.3	9.8	28.7	14.3	23.4	9.8	30.1
	平均値	17.4	41.5	18.6	38.2	21.9	35.0	18.5	38.3
	最大値	25.6	52.7	25.7	50.9	26.7	49.9	25.4	49.7
1月	最小値	8.5	20.2	9.6	17.3	13.5	18.9	9.7	17.3
	平均値	17.2	32.6	18.3	30.3	21.6	29.7	18.3	30.4
	最大値	25.4	50.2	25.9	45.8	27.4	47.0	25.3	44.7
2月	最小値	9.1	19.5	10.2	18.3	14.6	17.1	10.5	19.2
	平均値	18.2	28.5	19.1	27.1	22.6	26.6	19.1	27.2
	最大値	26.1	43.8	26.0	46.8	27.6	38.1	26.4	43.4
3月	最小値	12.7	20.7	13.4	18.1	17.4	19.8	13.9	19.8
	平均値	19.6	27.0	20.3	25.6	23.4	26.7	20.2	25.8
	最大値	28.3	36.6	27.0	34.3	28.7	38.4	26.4	33.2

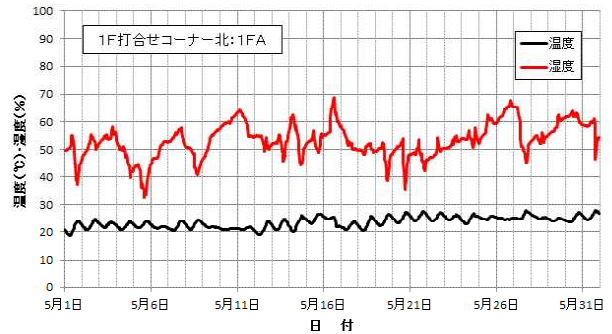
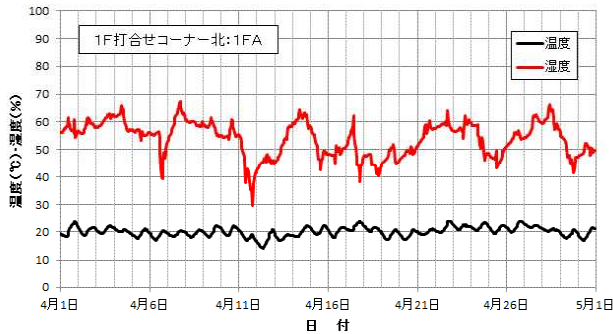
第2表 CLT建築物(カバヤ倉敷北展示場)の温湿度データ(月別・2階)

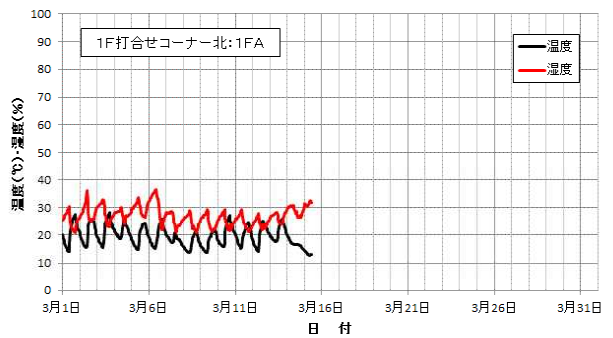
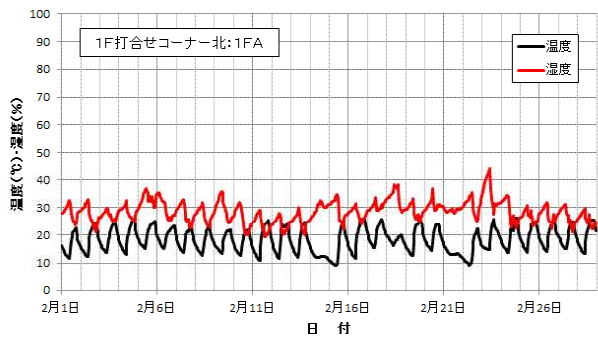
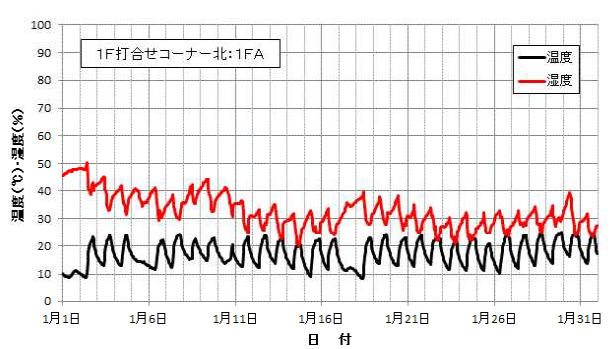
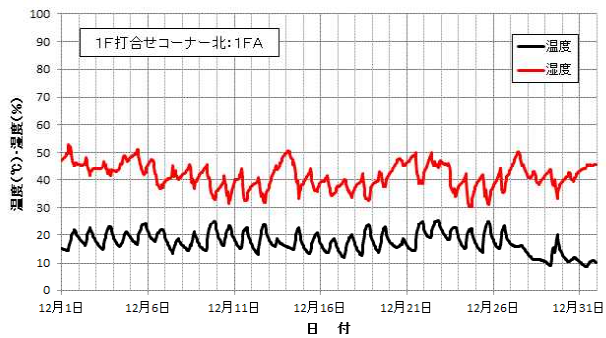
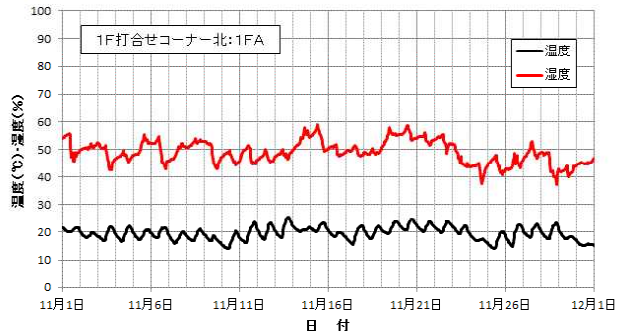
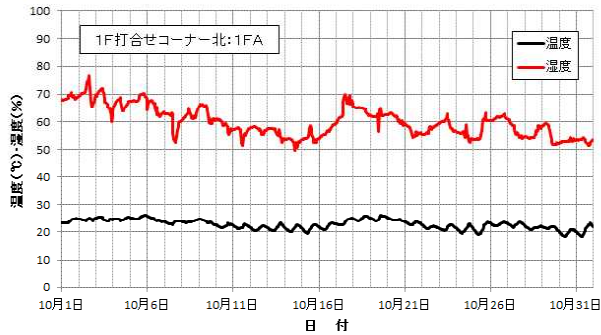
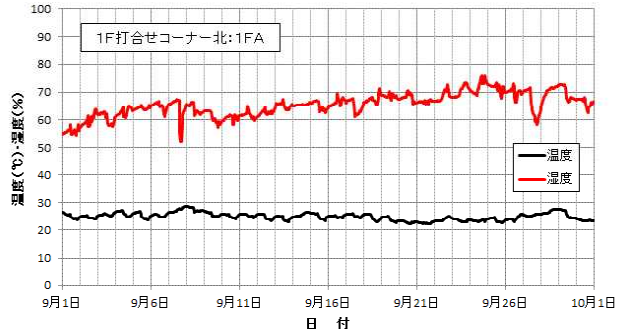
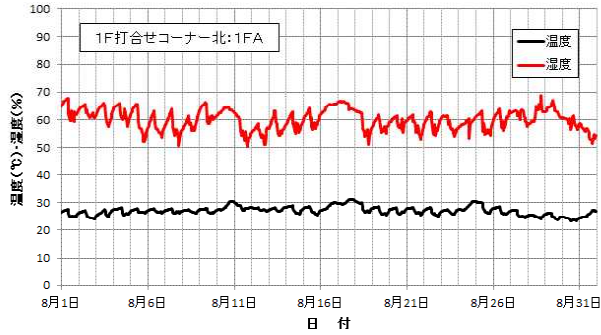
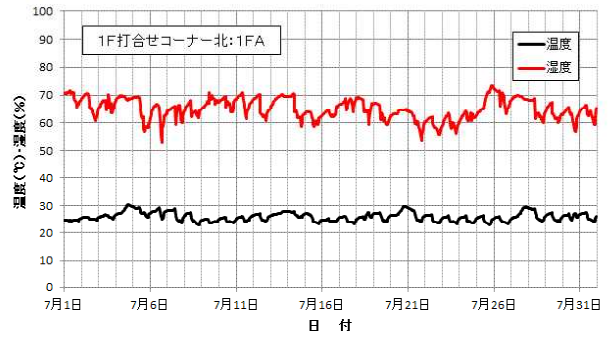
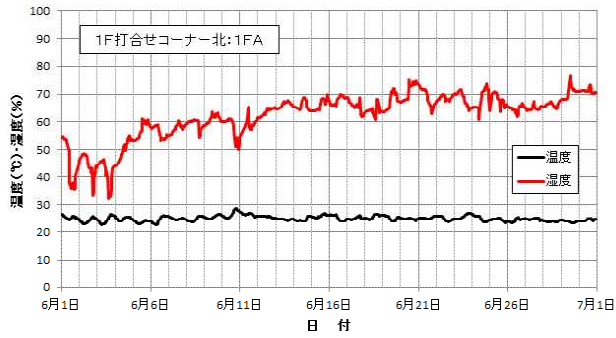
月	項目	2FA		2FB		2FC		2FD	
		℃	%RH	℃	%RH	℃	%RH	℃	%RH
4月	最小値	14.7	32.2	17.0	32.6	15.4	27.2	16.3	26.5
	平均値	20.1	57.4	22.5	49.8	21.6	51.0	22.0	50.7
	最大値	24.8	71.4	26.9	59.1	26.5	62.9	26.7	61.0
5月	最小値	19.2	29.7	21.4	30.0	20.2	25.9	20.6	25.5
	平均値	24.7	51.2	26.4	46.0	25.6	47.2	25.8	47.1
	最大値	30.0	73.4	31.6	60.4	30.7	71.0	31.1	66.7
6月	最小値	22.7	25.7	22.5	27.7	23.3	23.8	23.8	27.6
	平均値	26.4	56.2	27.8	52.0	26.8	53.7	27.2	53.0
	最大値	30.1	68.2	31.7	72.8	30.7	66.3	31.1	65.2
7月	最小値	25.2	33.4	22.0	34.9	24.5	36.9	25.5	34.6
	平均値	28.1	53.4	28.4	53.1	28.0	53.5	28.5	51.3
	最大値	33.0	67.4	33.9	64.0	33.6	65.3	33.5	63.6
8月	最小値	25.1	33.4	20.9	39.4	24.2	38.1	24.4	36.0
	平均値	28.3	51.2	27.2	54.3	28.0	52.1	28.6	49.5
	最大値	33.7	70.4	34.5	74.7	34.5	72.8	35.1	66.3
9月	最小値	22.6	40.3	20.9	45.4	22.6	42.2	22.9	39.8
	平均値	25.9	58.3	25.1	60.0	25.8	58.6	26.1	55.8
	最大値	30.5	70.2	31.5	69.7	31.0	67.5	31.5	65.2
10月	最小値	18.1	46.8	19.6	49.8	18.7	46.2	19.2	44.4
	平均値	22.8	58.8	23.8	56.7	23.6	56.0	24.0	54.5
	最大値	26.8	71.6	27.9	69.7	28.3	69.9	28.3	66.8
11月	最小値	14.0	38.8	15.3	27.8	14.6	36.8	14.9	36.2
	平均値	18.8	52.0	21.7	44.7	20.5	46.8	20.9	45.9
	最大値	23.1	63.0	29.9	54.8	26.7	55.5	27.9	55.2
12月	最小値	8.8	36.2	10.3	22.6	9.5	32.2	9.8	31.6
	平均値	16.0	46.4	20.0	36.6	18.1	40.4	18.6	39.2
	最大値	20.9	58.6	28.9	45.9	24.8	52.0	26.3	50.5
1月	最小値	8.4	25.2	9.8	13.7	9.1	20.5	9.4	20.1
	平均値	15.6	38.2	21.5	27.1	18.3	32.1	19.1	30.8
	最大値	20.3	61.1	29.4	47.4	24.5	46.4	26.4	46.2
2月	最小値	9.9	24.8	11.7	14.7	10.4	21.2	11.0	20.0
	平均値	16.5	33.6	21.9	24.3	19.1	28.5	19.8	27.3
	最大値	21.5	48.6	29.1	37.5	24.9	39.4	26.7	38.4
3月	最小値	13.0	24.6	15.0	16.6	13.9	21.4	14.1	21.7
	平均値	17.7	31.3	22.3	24.0	19.9	27.3	20.5	26.4
	最大値	22.8	39.4	29.0	31.1	25.4	33.3	27.1	31.7

第3表 CLT建築物(カバヤ倉敷北展示場)の温湿度データ(月別・床下・屋外)

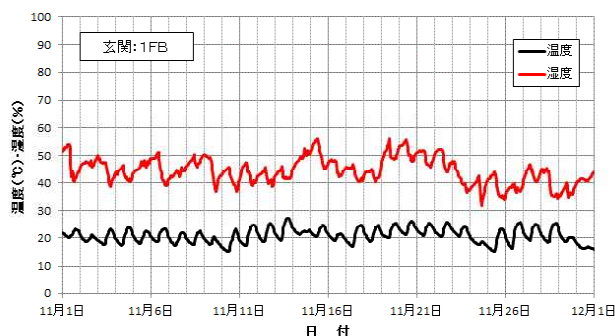
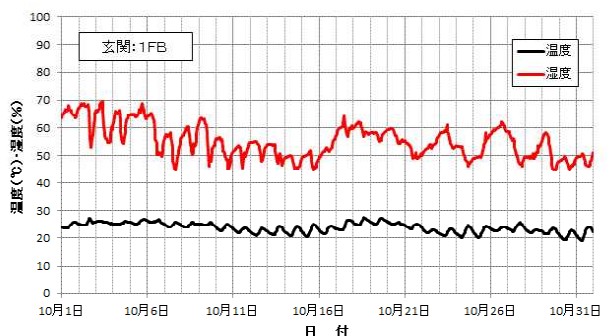
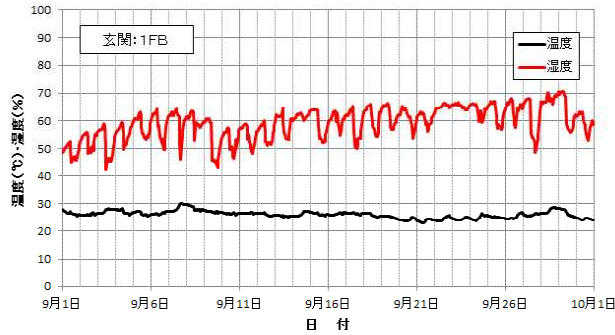
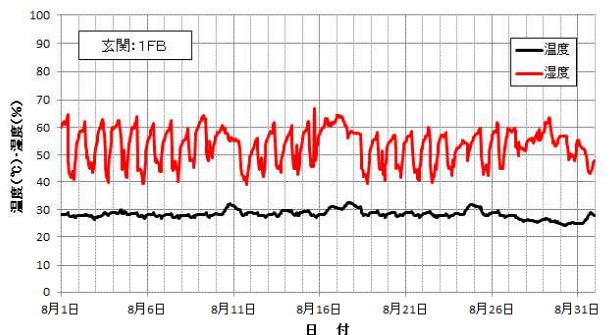
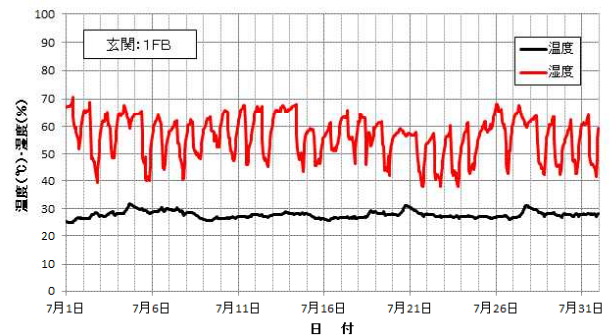
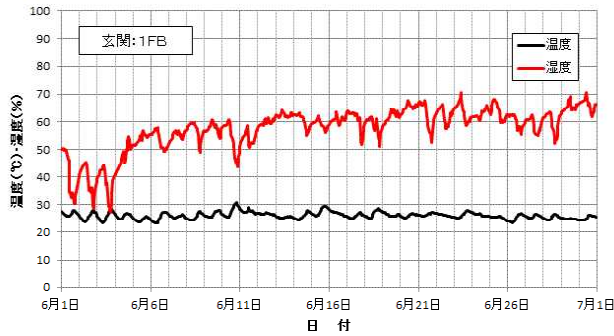
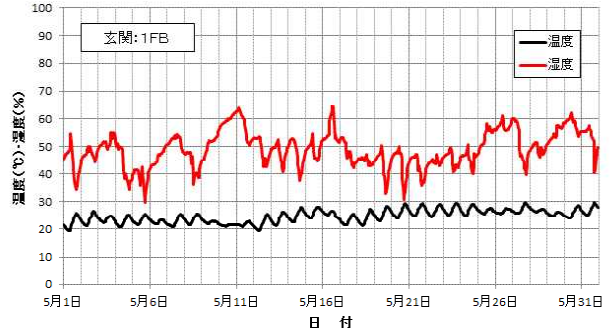
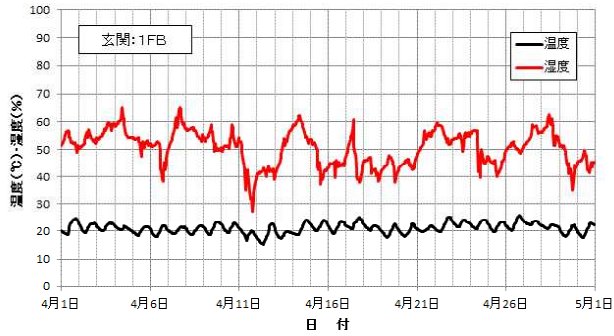
月	項目	UG1		UG2		UG3		UG4		okugai	
		℃	%RH	℃	%RH	℃	%RH	℃	%RH	℃	%RH
4月	最小値	14.5	32.0	14.1	30.3	14.2	33.2	12.3	28.4	3.5	16.7
	平均値	16.2	68.3	16.9	65.3	16.7	66.7	17.1	63.2	17.0	64.5
	最大値	18.4	96.3	21.6	97.4	20.6	96.6	22.7	95.9	28.3	95.6
5月	最小値	16.7	38.2	17.1	29.4	16.9	37.5	16.3	26.5	10.6	22.9
	平均値	19.2	70.9	20.3	66.6	20.0	68.0	20.9	63.4	21.5	63.0
	最大値	22.2	96.7	25.0	94.9	23.0	95.2	26.7	94.0	31.5	95.7
6月	最小値	20.1	41.0	19.6	35.5	20.1	38.6	18.8	32.1	13.1	20.9
	平均値	21.6	83.4	22.4	79.6	22.2	80.6	23.1	76.5	23.9	74.9
	最大値	23.6	97.9	25.4	96.2	24.8	96.0	26.9	94.0	33.4	97.2
7月	最小値	22.0	72.7	22.4	64.0	22.5	71.2	22.9	58.2	21.5	38.6
	平均値	24.2	91.6	25.9	82.9	25.2	86.4	27.3	76.8	29.2	70.8
	最大値	26.1	100.2	29.6	96.2	27.8	96.9	31.8	92.5	37.9	96.9
8月	最小値	24.7	48.0	24.4	36.8	25.4	46.8	23.4	33.4	20.8	27.4
	平均値	25.8	83.5	27.6	73.6	27.2	76.4	29.0	68.0	30.7	63.2
	最大値	27.5	96.7	31.4	89.5	29.3	89.2	33.3	82.7	40.2	94.5
9月	最小値	23.8	62.2	23.4	52.3	23.8	57.7	22.1	51.4	18.0	38.1
	平均値	24.9	82.3	25.5	78.4	25.6	78.4	25.9	76.8	25.7	78.9
	最大値	26.4	96.3	28.4	94.5	28.1	92.9	29.6	95.0	33.9	97.9
10月	最小値	21.1	35.7	20.5	29.9	20.2	32.0	18.2	28.2	8.9	24.3
	平均値	22.9	65.9	22.9	63.7	22.9	64.2	22.4	64.9	20.4	72.9
	最大値	24.7	94.6	26.4	92.8	25.6	92.5	27.6	93.2	32.5	96.9
11月	最小値	17.1	30.0	15.3	26.5	16.7	32.6	13.4	26.0	3.1	26.4
	平均値	19.5	51.9	19.1	51.6	19.1	52.5	17.4	56.9	13.3	73.6
	最大値	21.5	80.3	21.1	82.5	21.2	78.9	20.7	87.8	23.9	98.0
12月	最小値	13.3	30.8	13.3	30.9	13.2	32.0	9.5	37.0	-0.5	34.3
	平均値	16.4	47.2	15.8	47.7	15.9	48.7	13.7	54.9	8.9	75.6
	最大値	18.2	82.9	18.0	90.3	17.9	84.8	17.6	93.1	19.2	100.7
1月	最小値	10.4	25.5	9.4	26.4	11.0	25.2	4.4	27.3	-2.8	27.7
	平均値	13.0	41.7	12.6	42.2	13.1	42.2	10.4	49.5	5.9	69.2
	最大値	15.1	68.5	14.7	67.0	14.7	66.2	15.1	76.9	17.2	97.1
2月	最小値	10.1	29.0	9.2	27.5	10.9	28.2	4.5	28.2	-2.9	25.4
	平均値	12.2	42.1	12.1	42.2	12.3	42.8	10.3	48.4	6.6	65.0
	最大値	13.5	76.0	14.3	77.3	13.3	71.9	14.3	89.3	17.1	98.8
3月	最小値	11.5	24.4	11.6	20.2	11.6	25.6	8.6	20.4	-0.9	16.8
	平均値	13.1	41.3	13.1	40.8	12.9	42.3	11.6	45.6	8.6	59.1
	最大値	14.0	60.2	15.4	62.6	13.7	59.5	15.4	67.2	18.1	92.2

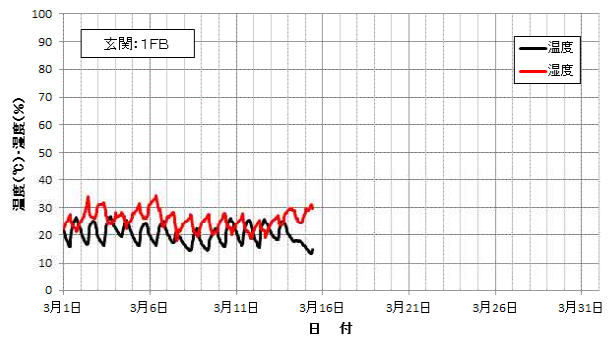
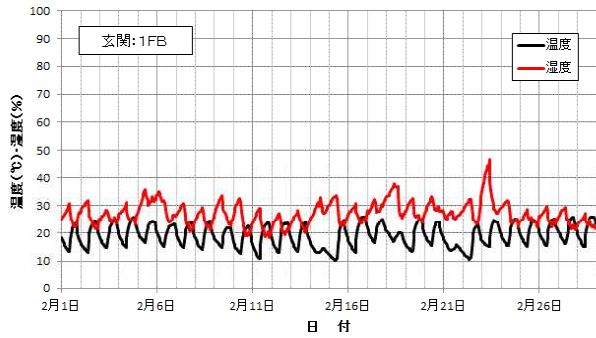
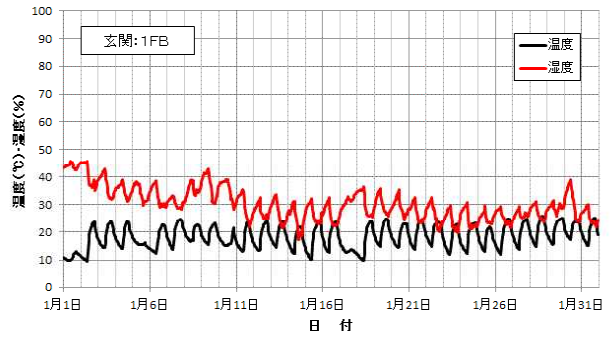
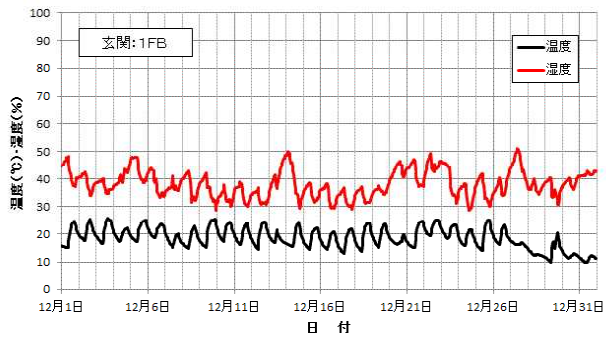
① 1階打合せコーナー北：1 F A



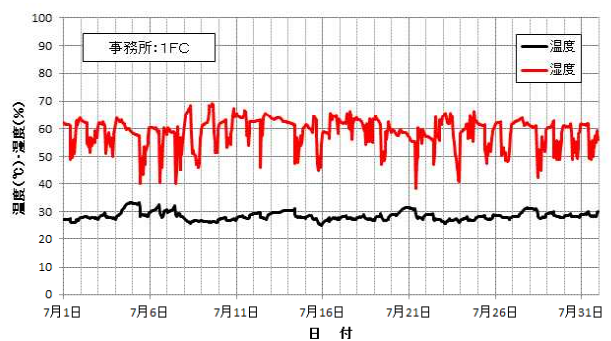
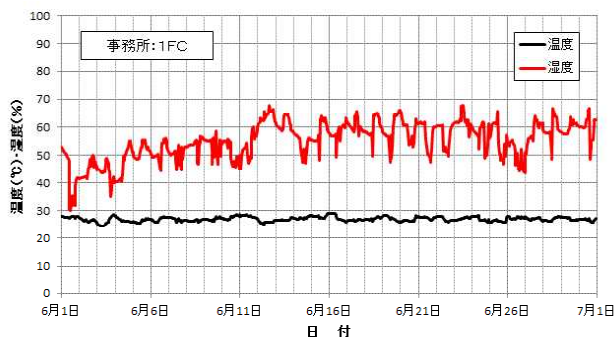
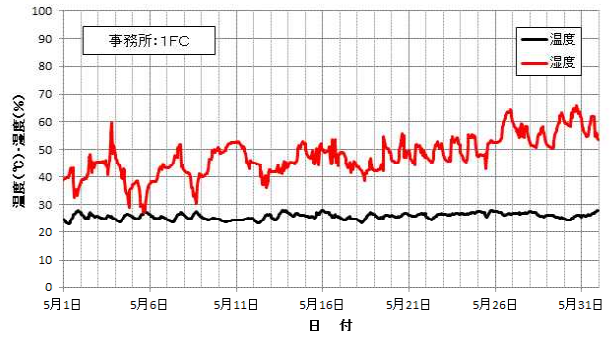
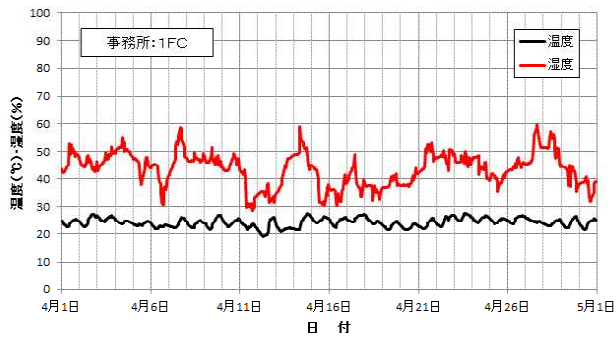


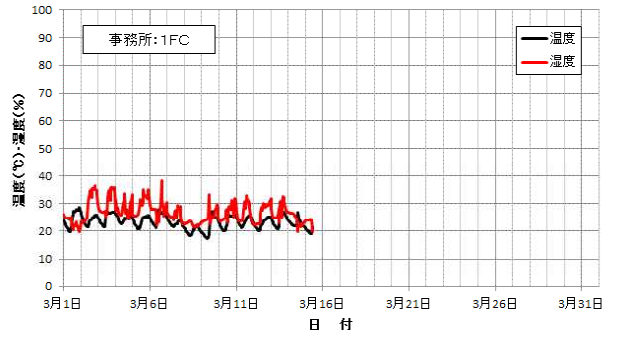
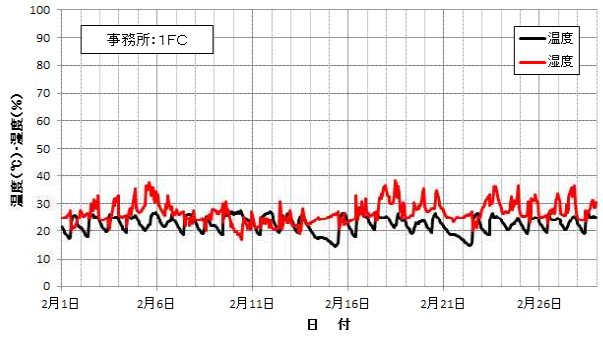
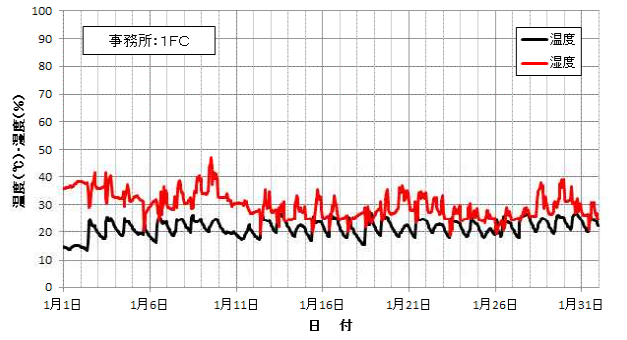
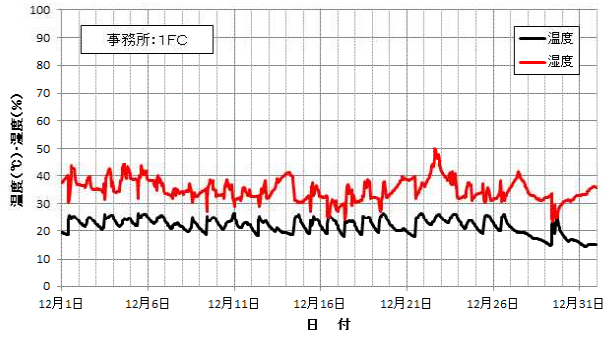
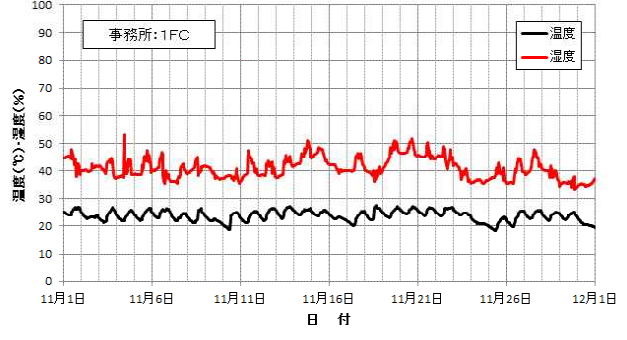
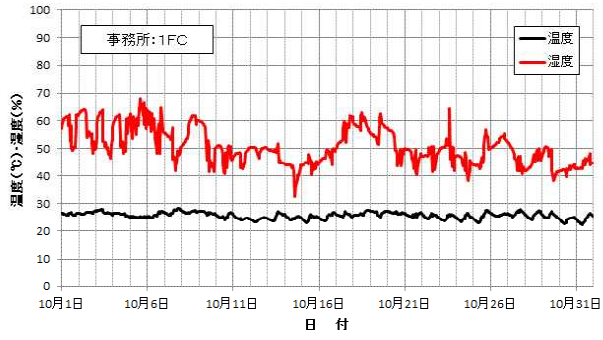
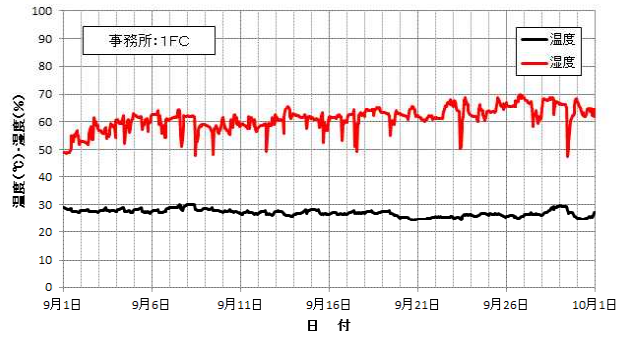
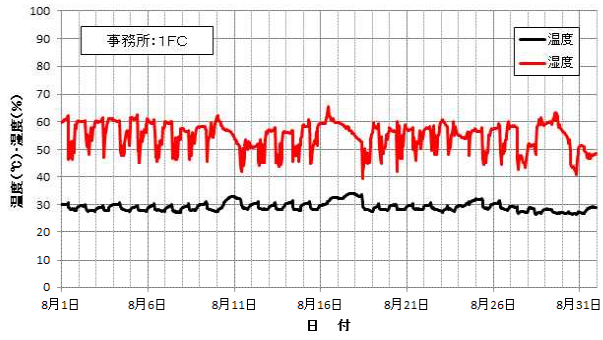
②玄関：1FB



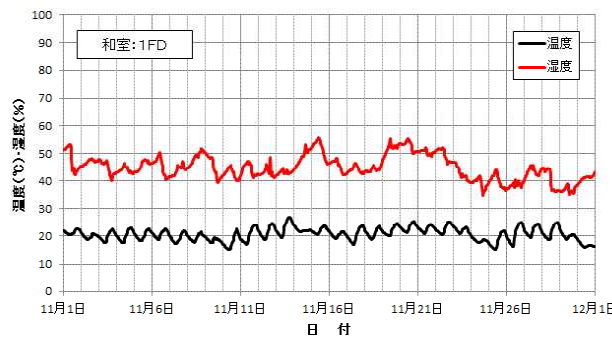
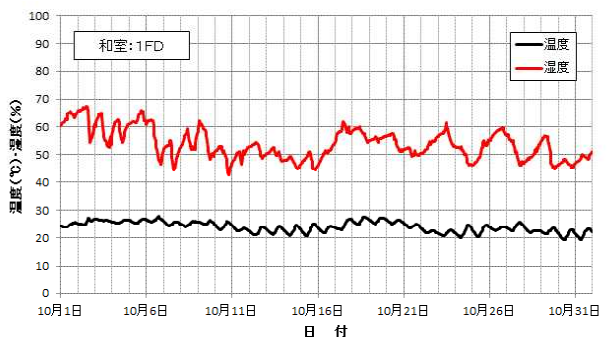
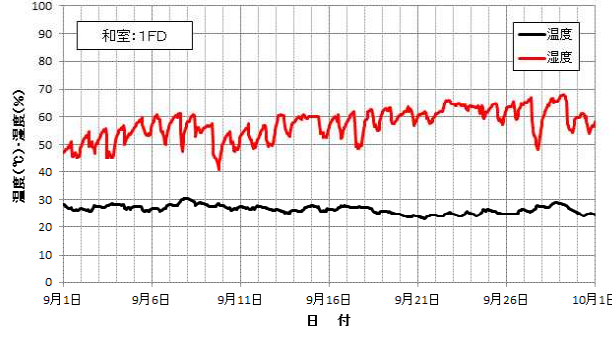
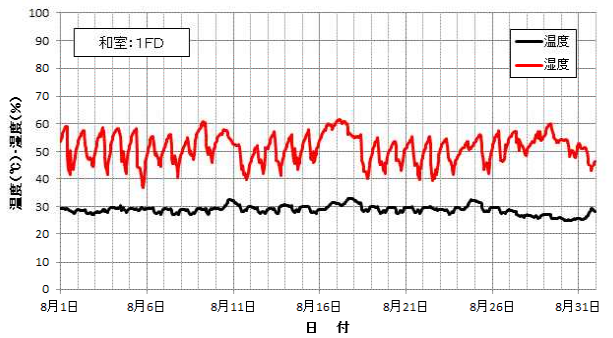
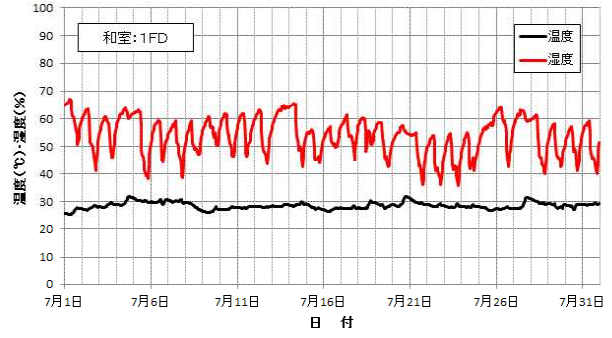
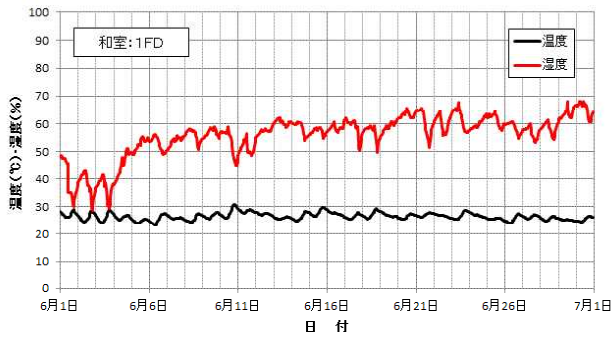
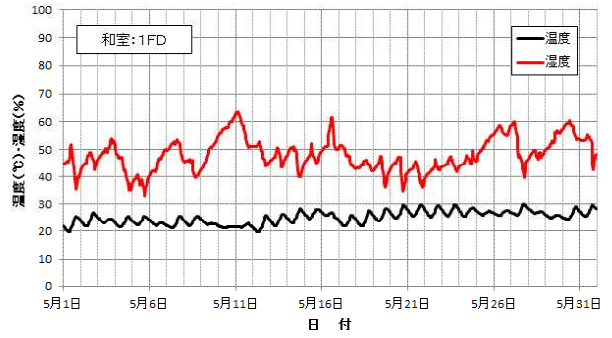
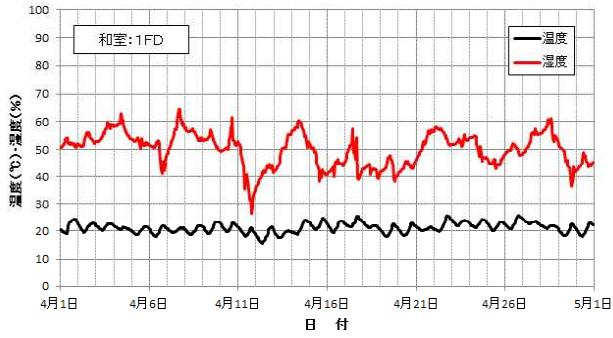


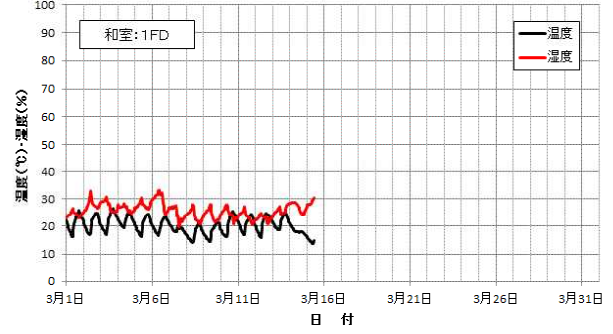
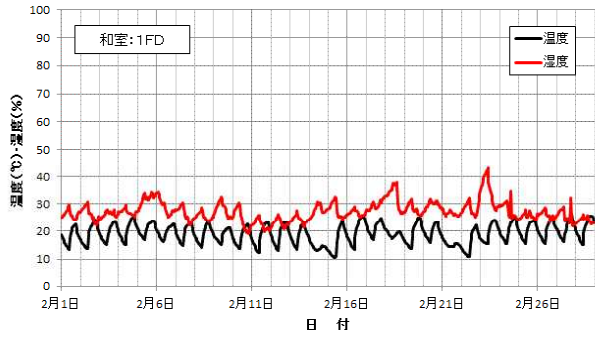
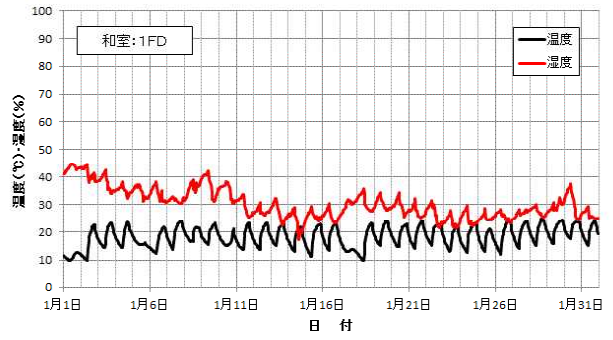
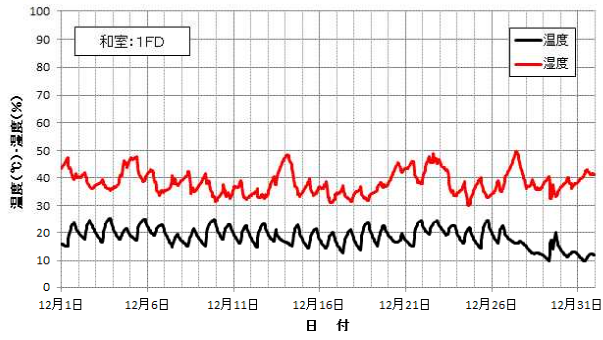
③事務所：1 F C



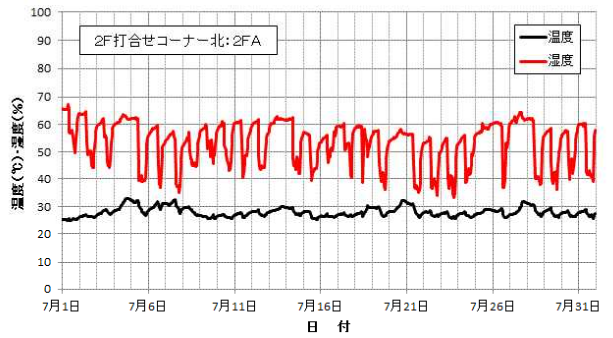
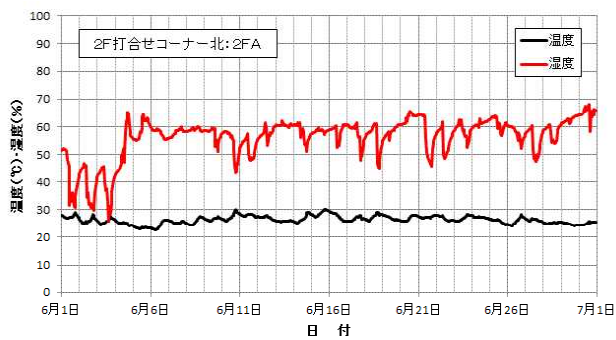
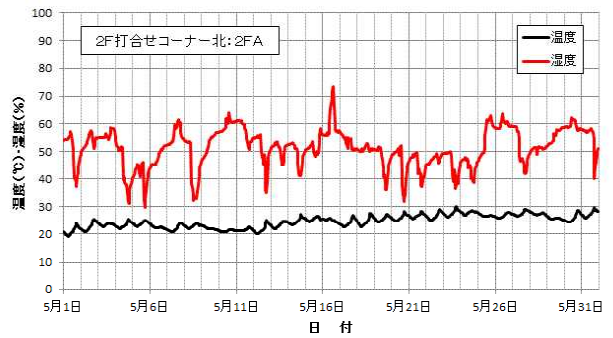
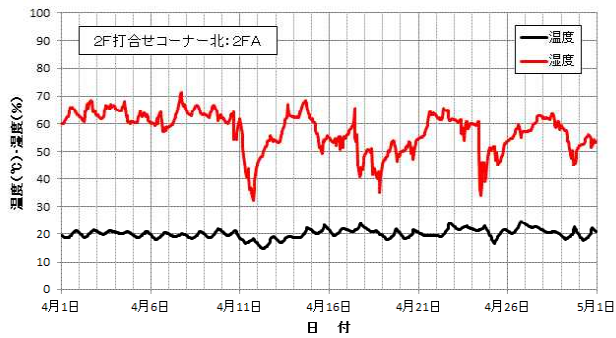


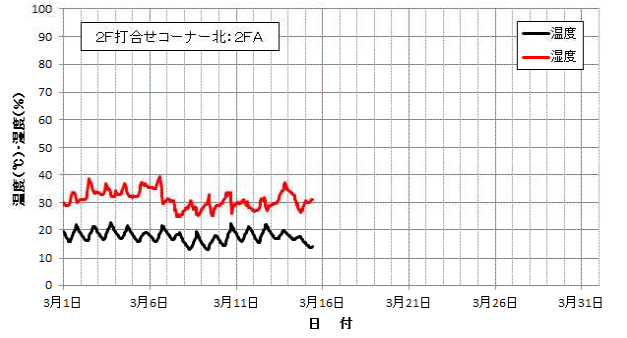
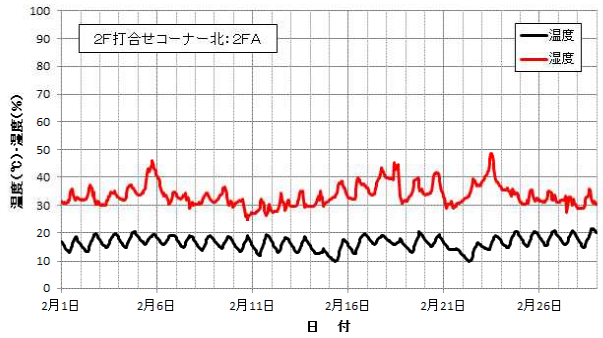
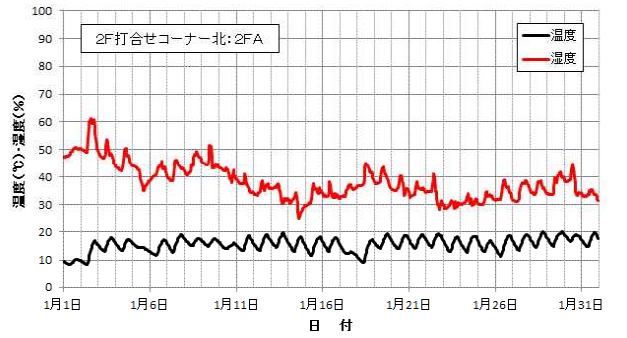
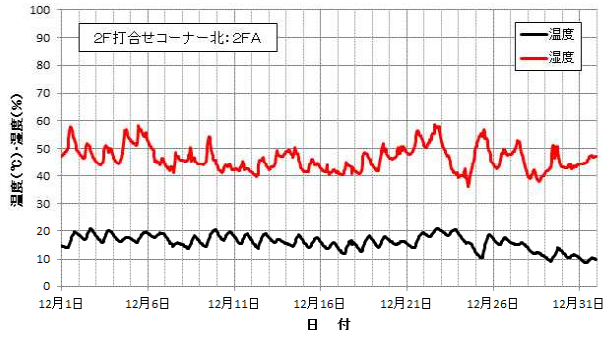
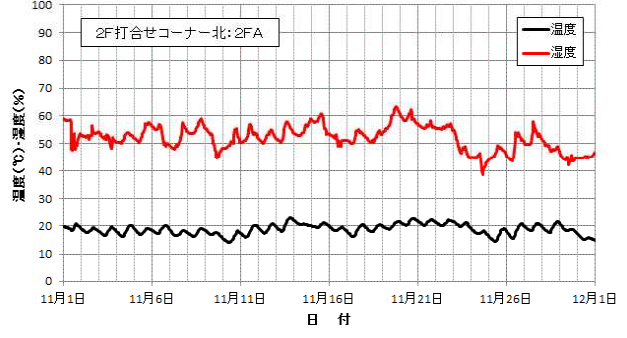
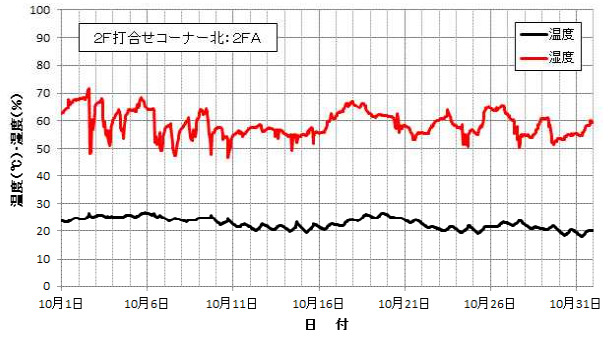
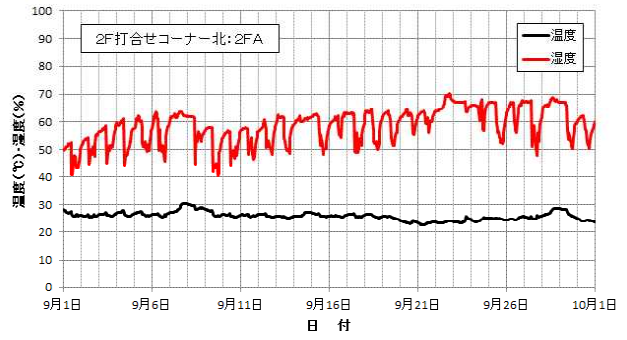
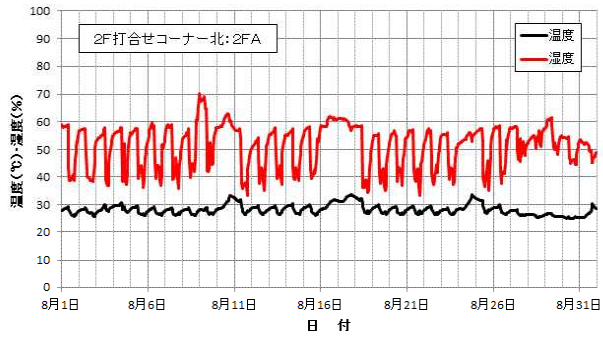
④和室：1FD



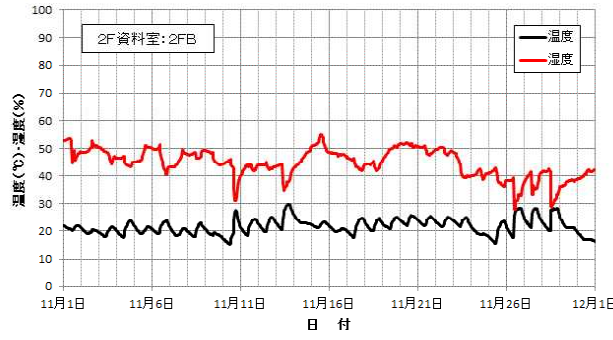
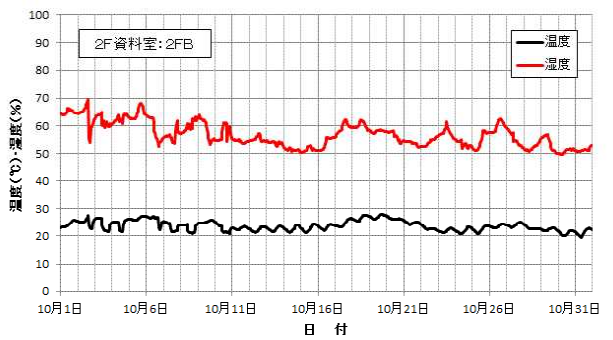
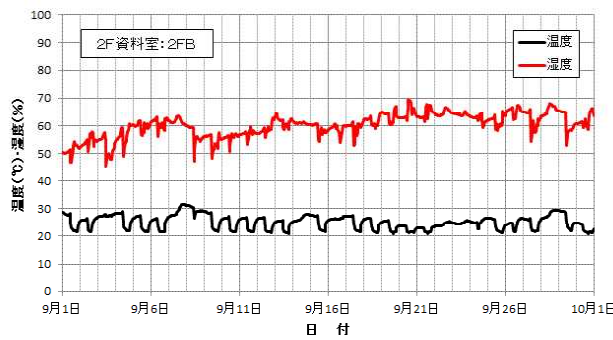
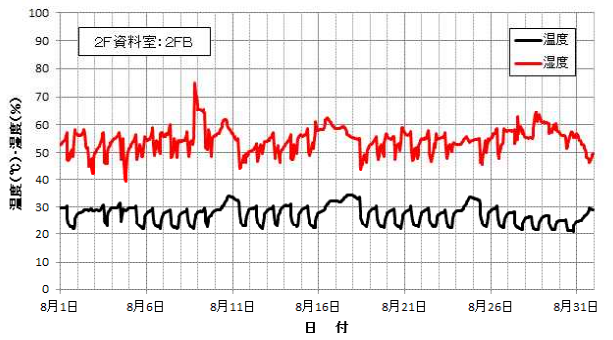
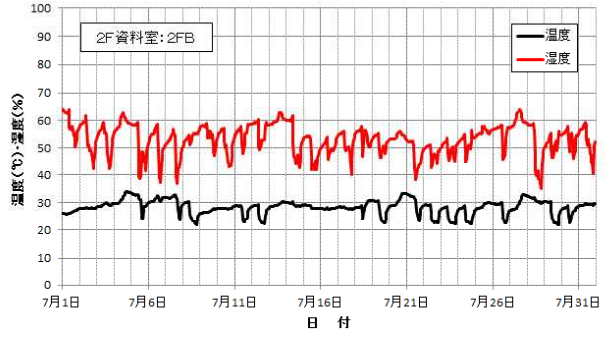
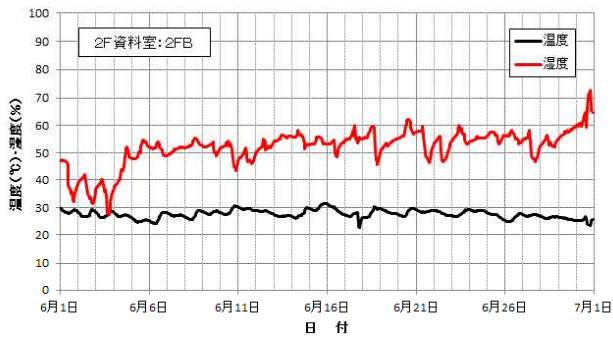
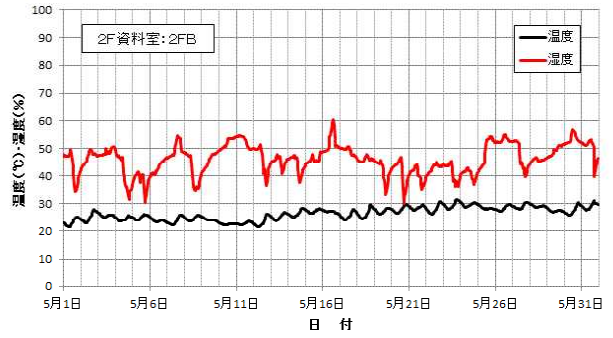
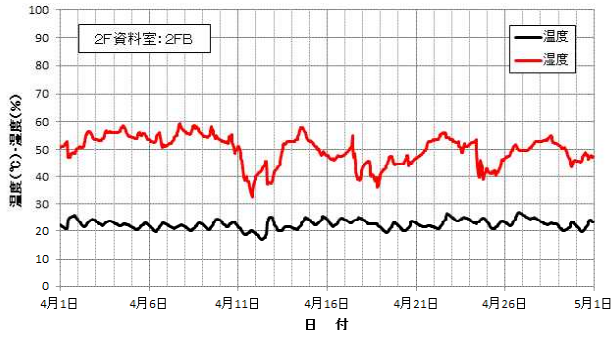


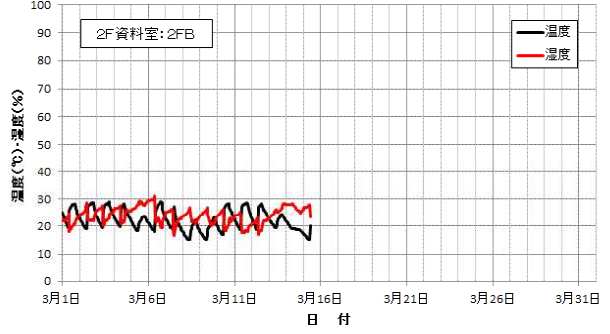
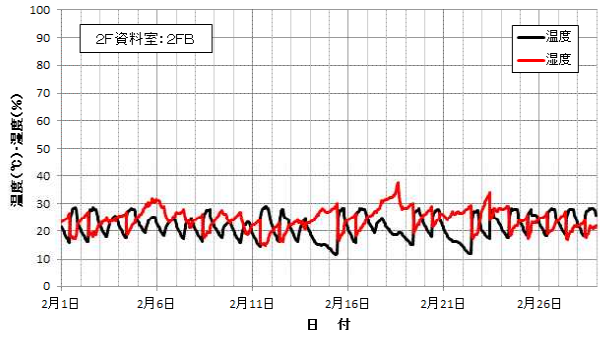
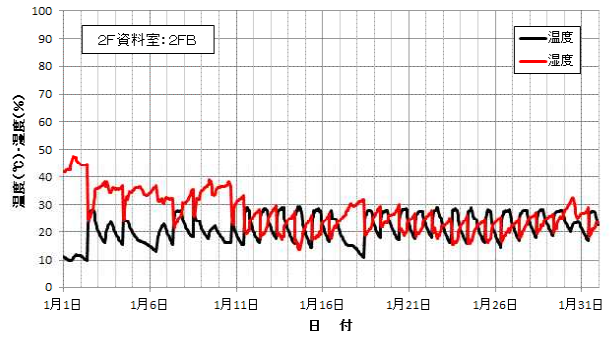
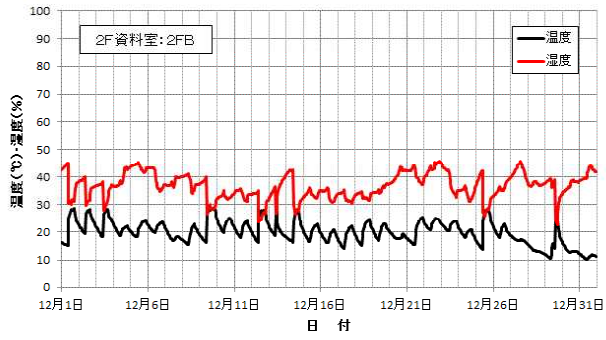
⑤ 2階打合せコーナー北: 2FA



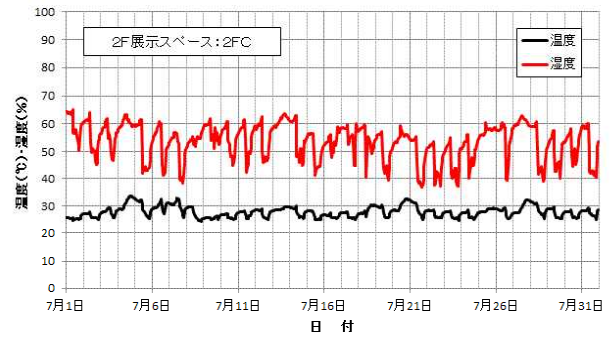
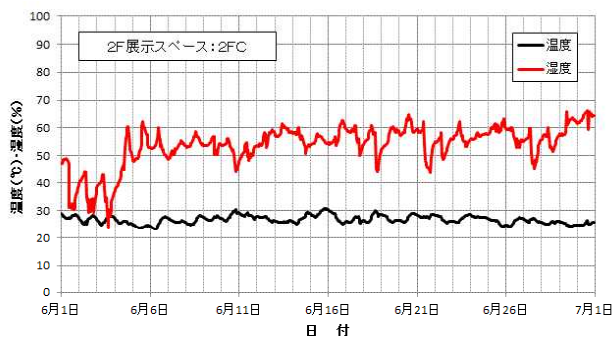
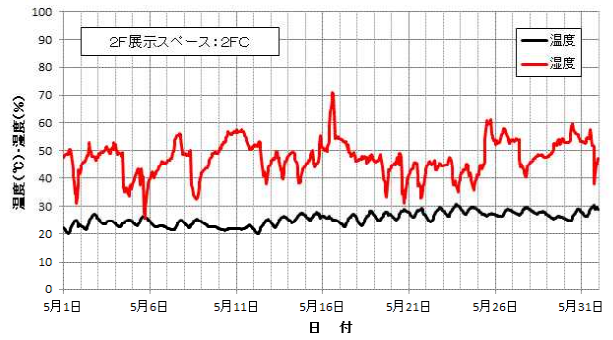
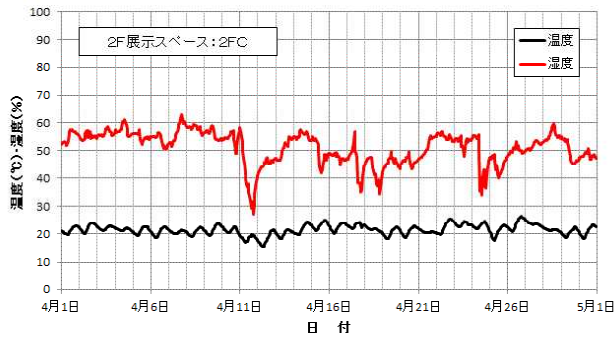


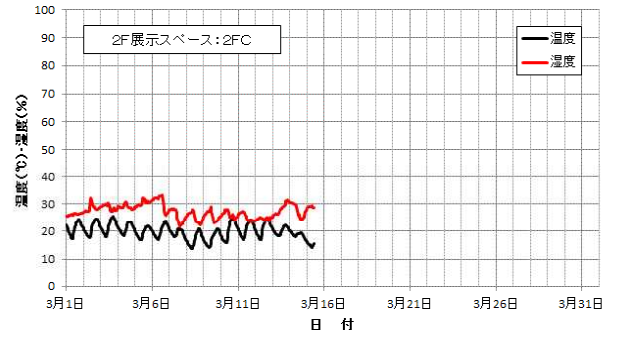
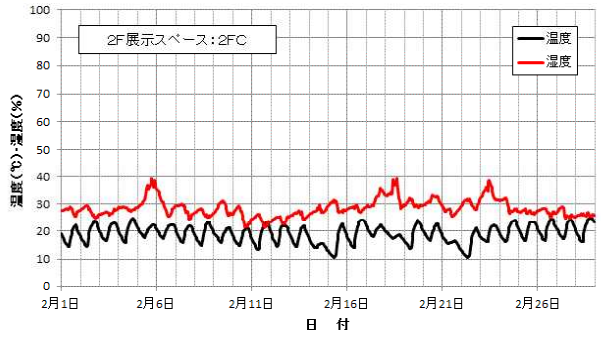
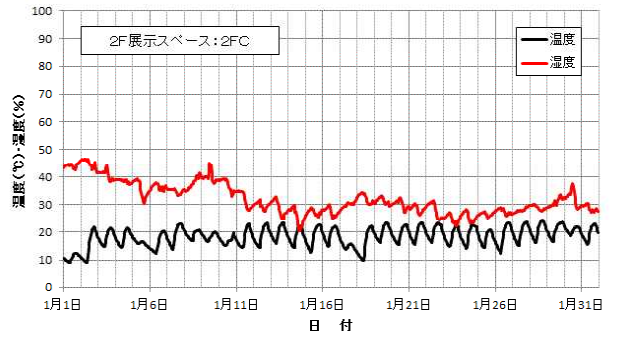
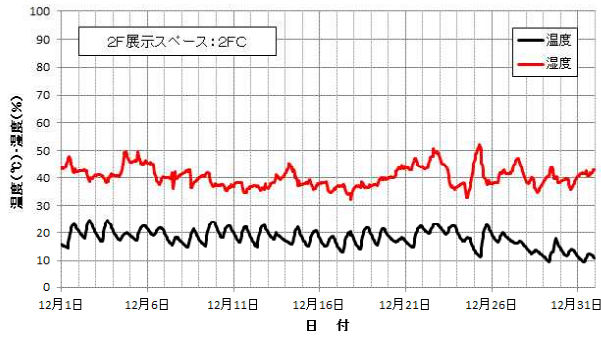
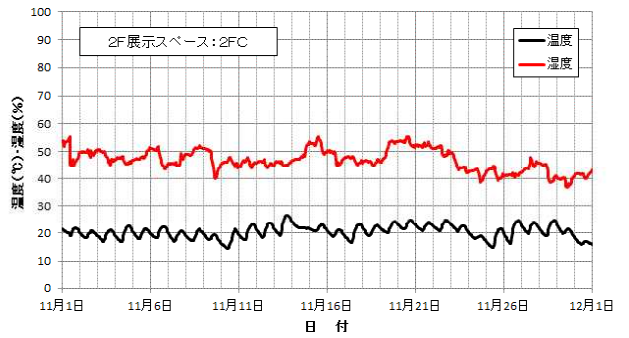
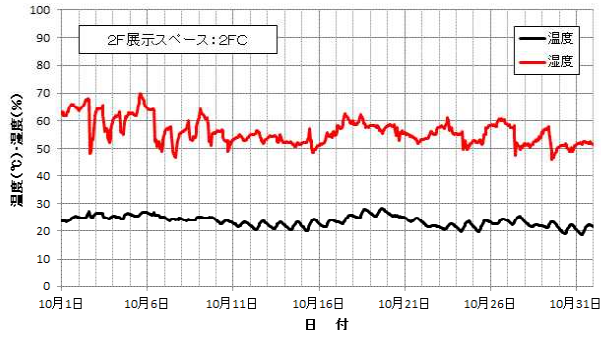
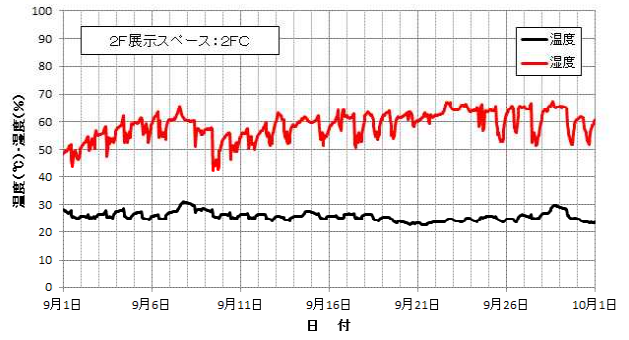
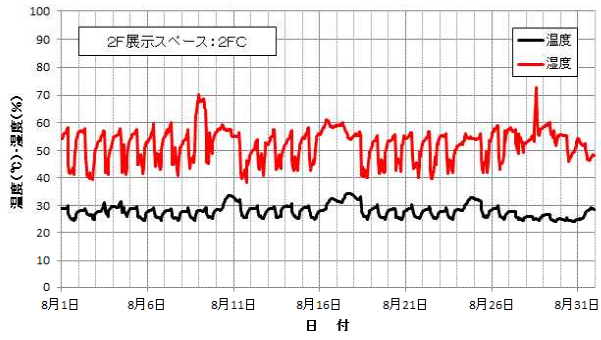
⑥ 2階資料室：2FB



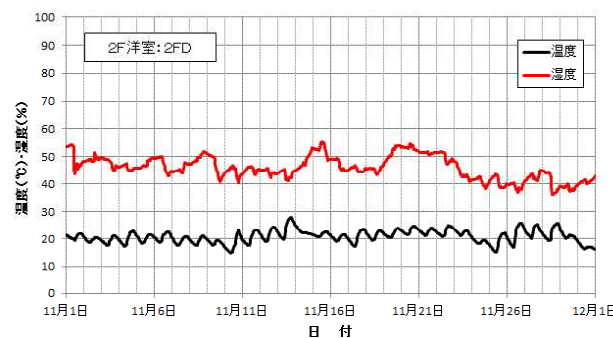
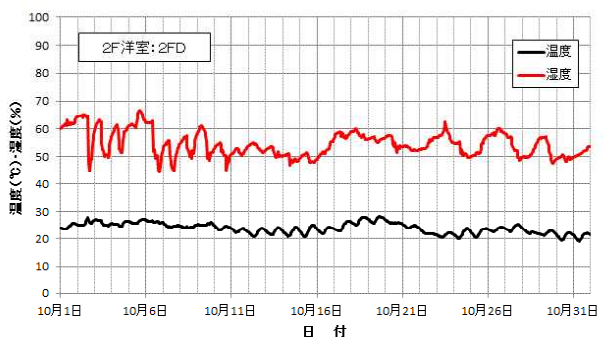
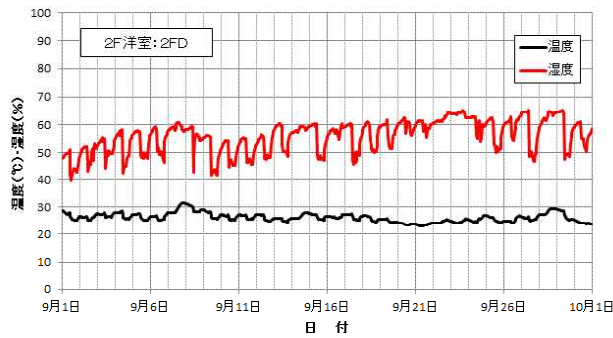
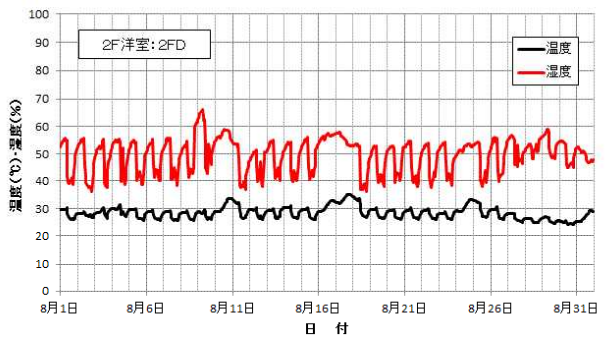
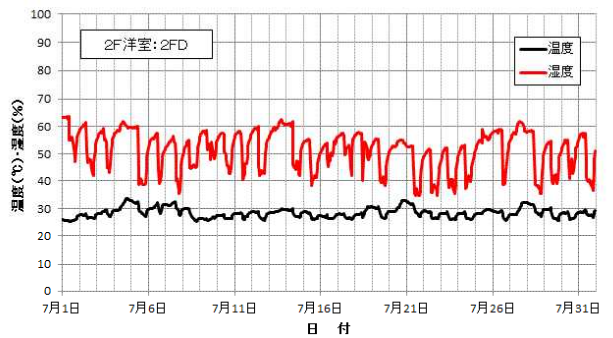
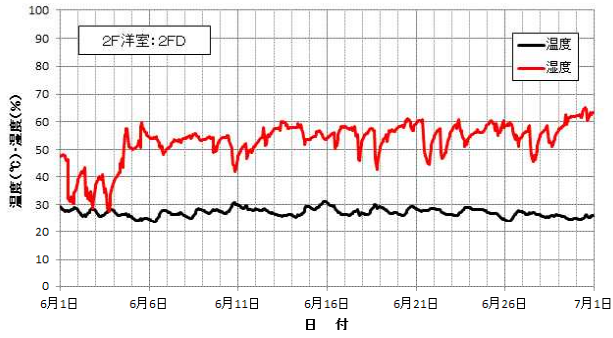
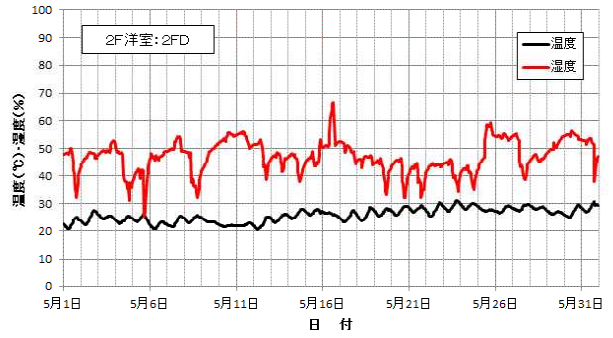
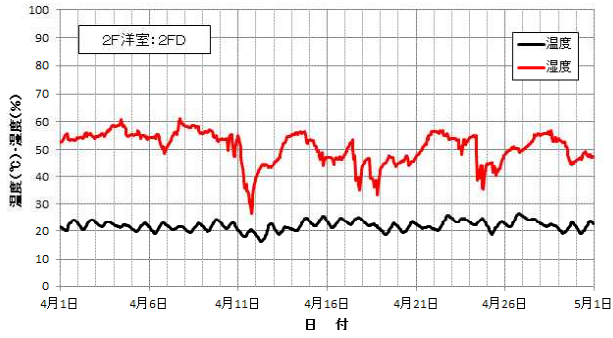


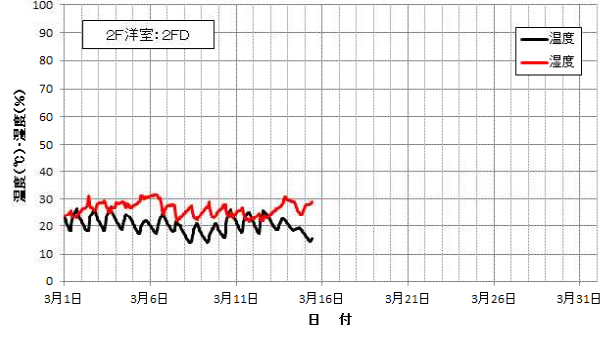
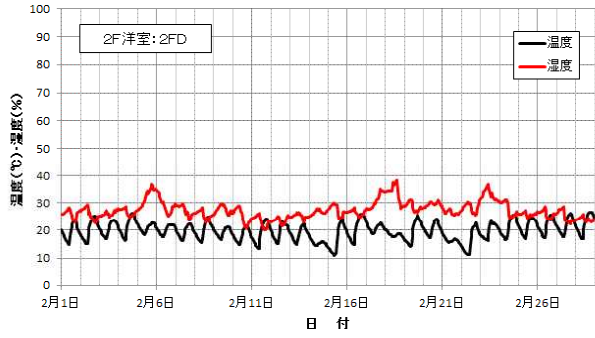
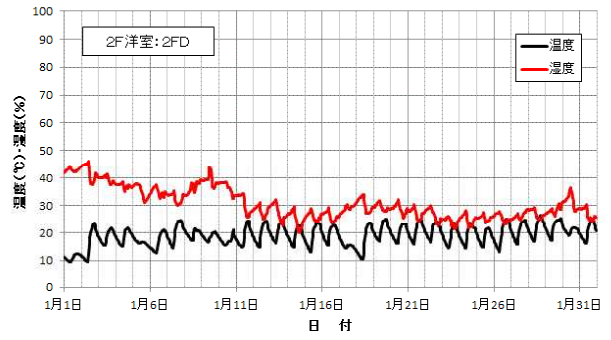
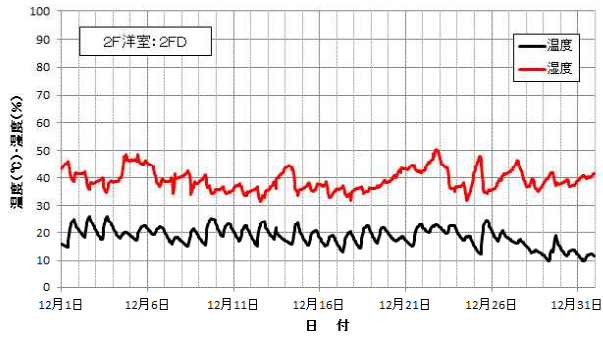
⑦ 2階展示スペース：2FC



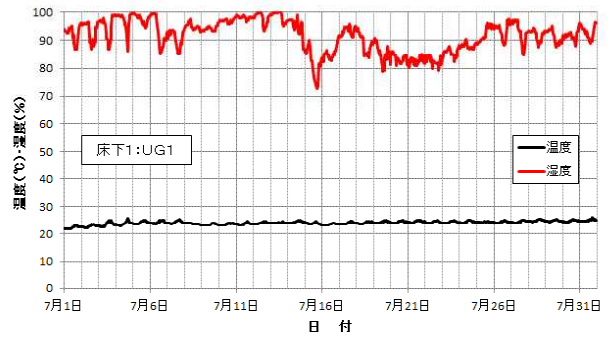
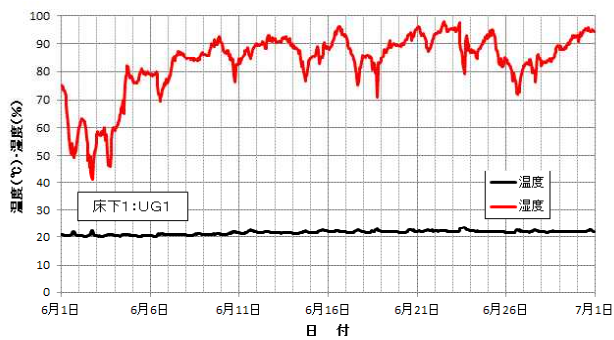
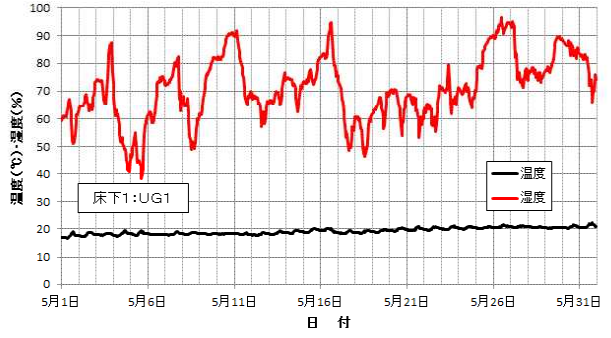
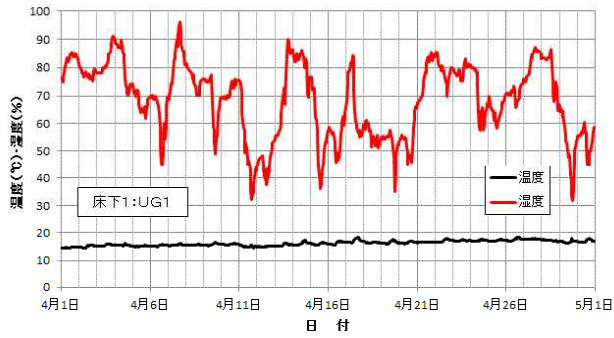


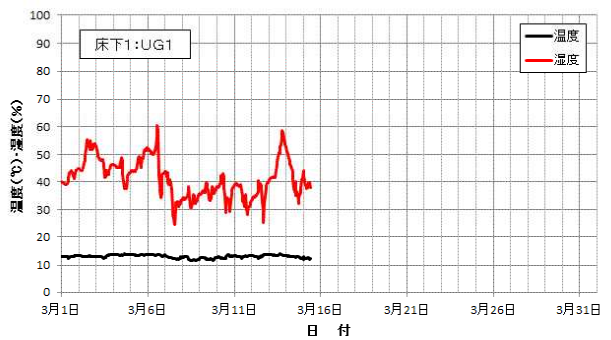
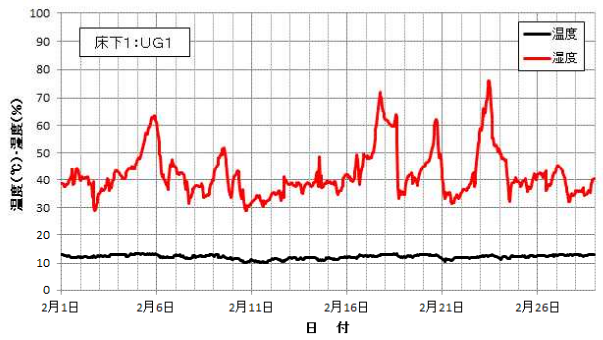
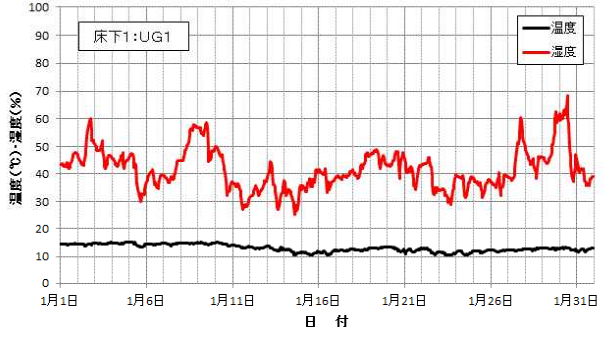
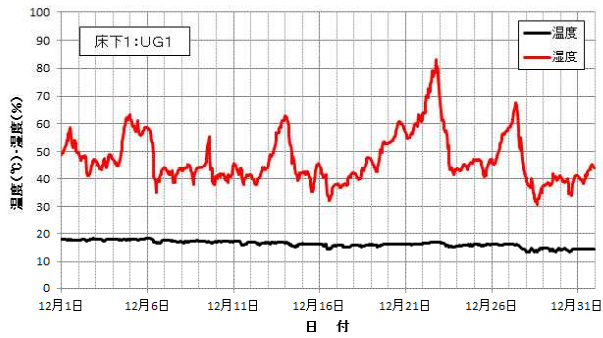
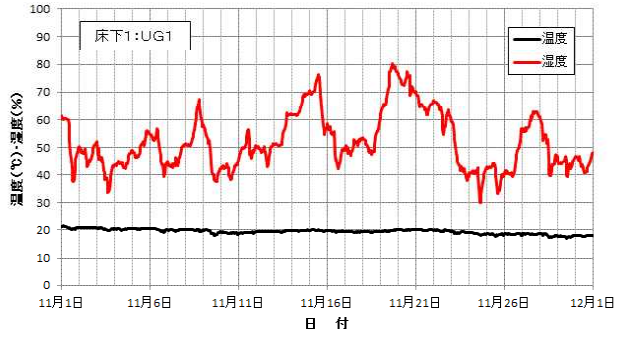
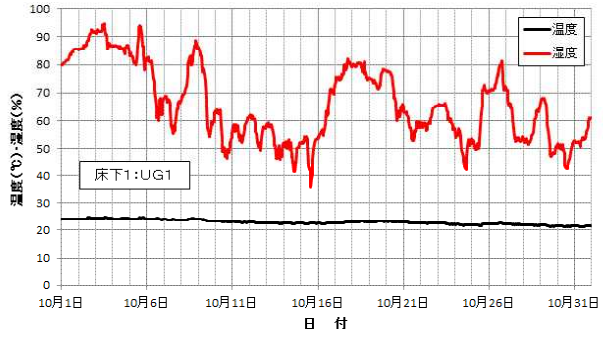
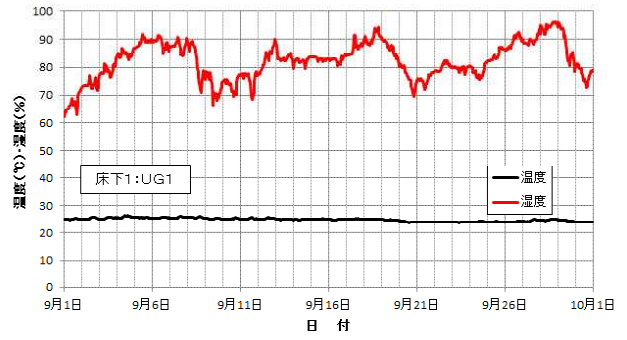
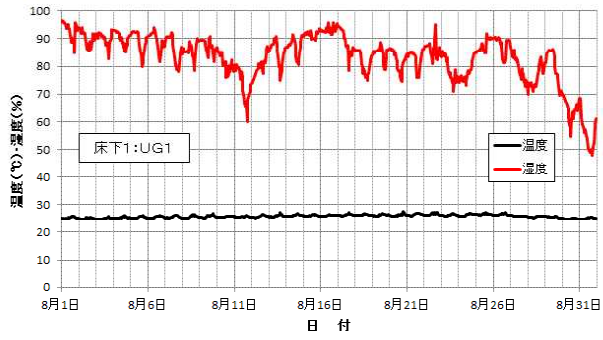
⑧ 2階洋室：2FD



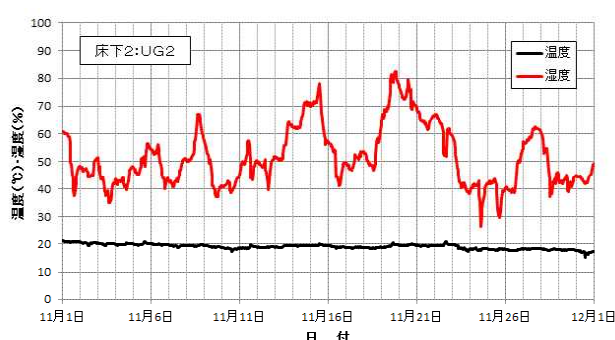
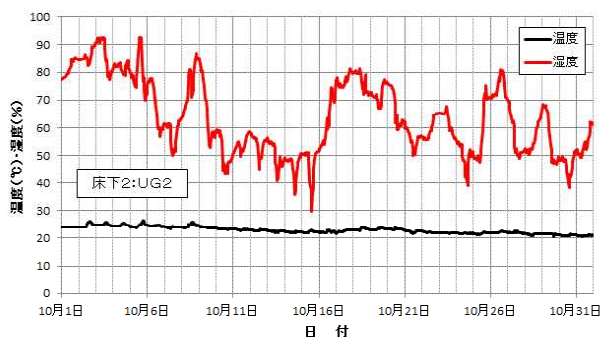
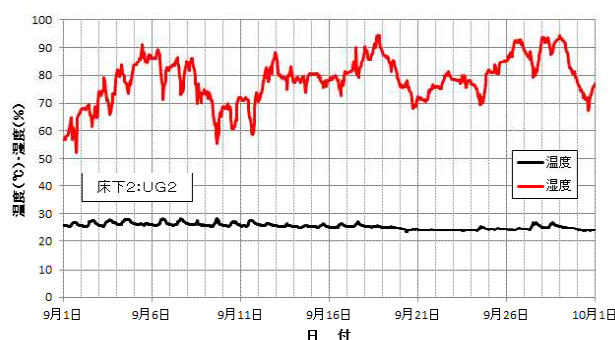
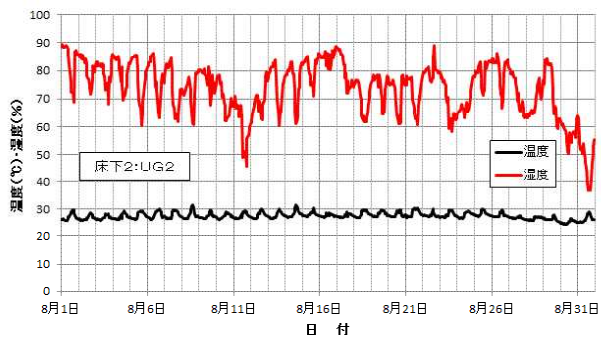
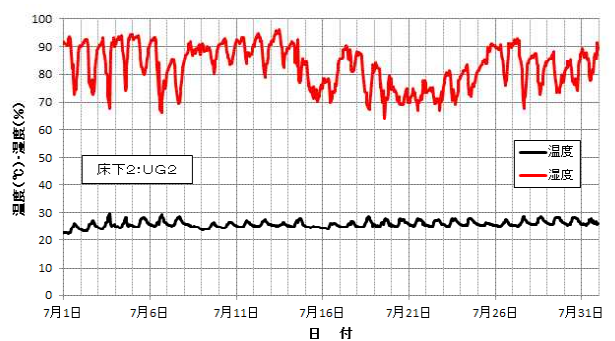
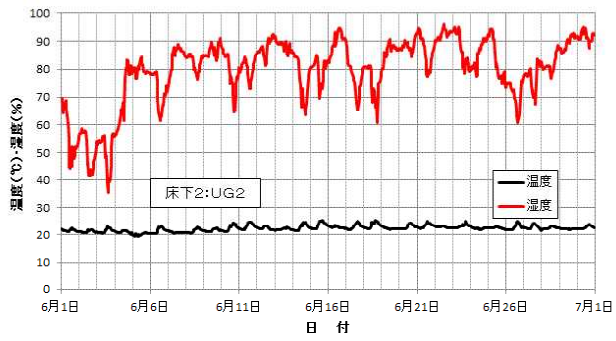
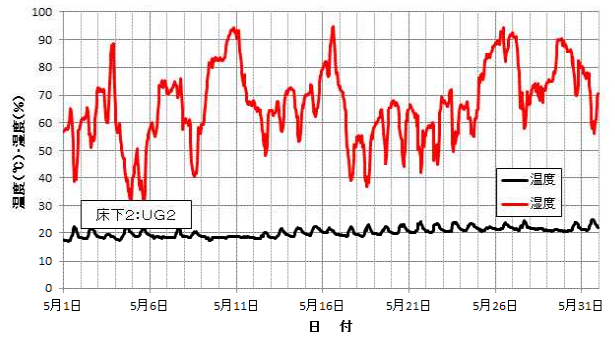
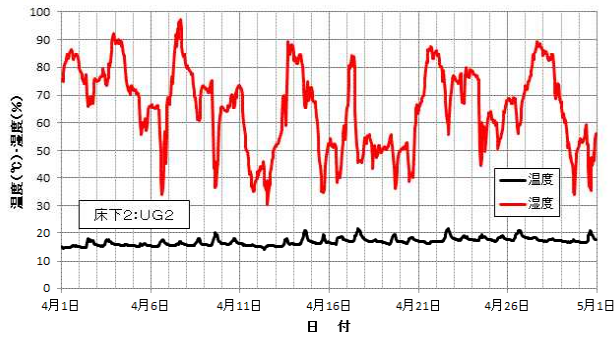


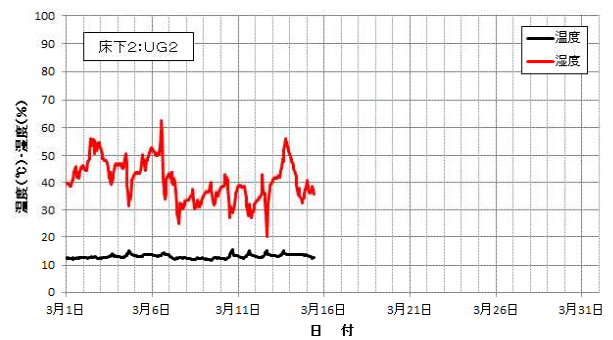
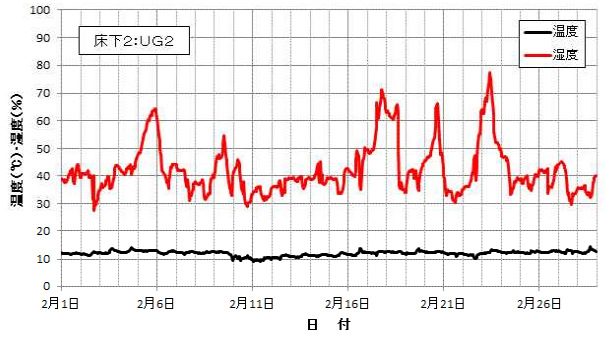
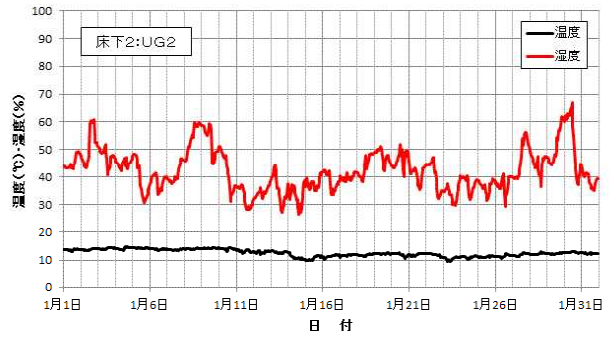
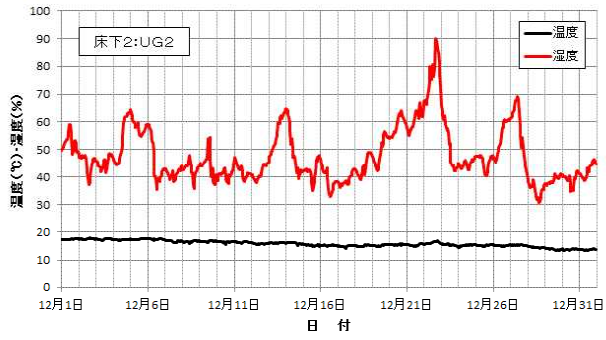
⑨床下1:UG1



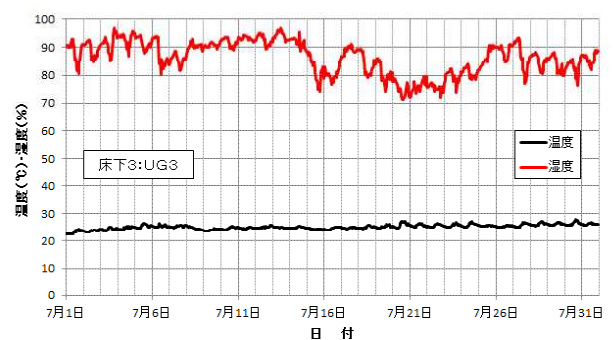
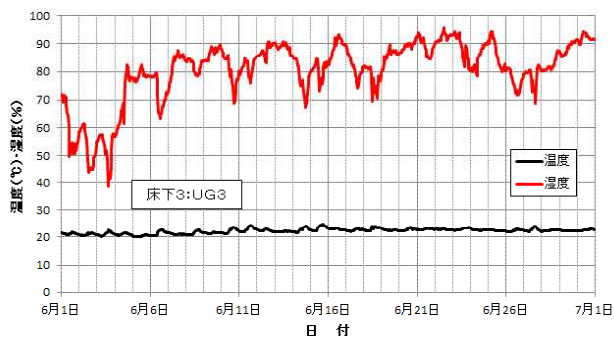
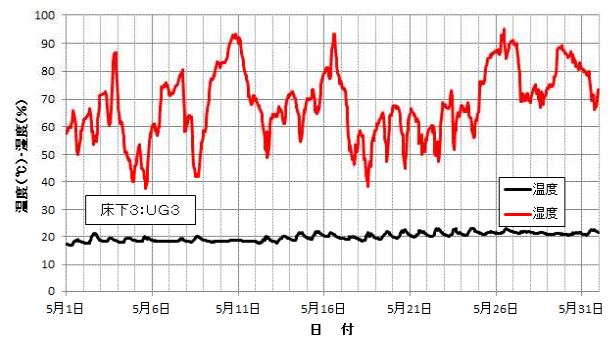
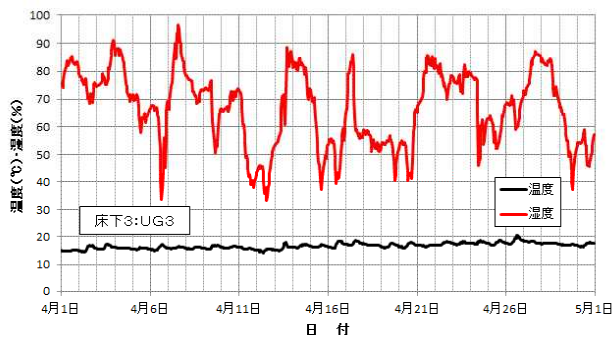


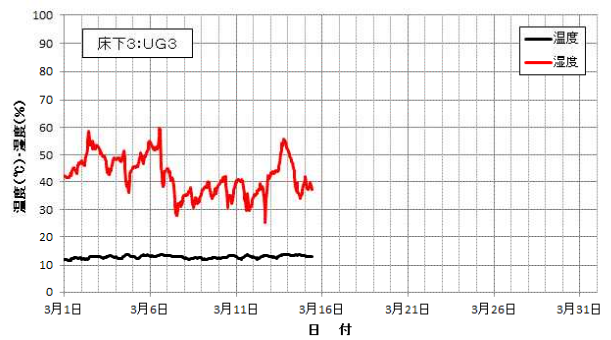
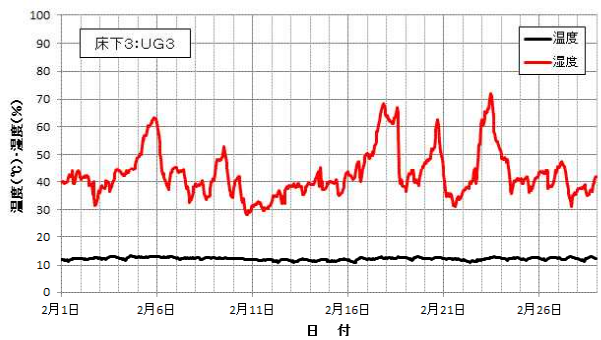
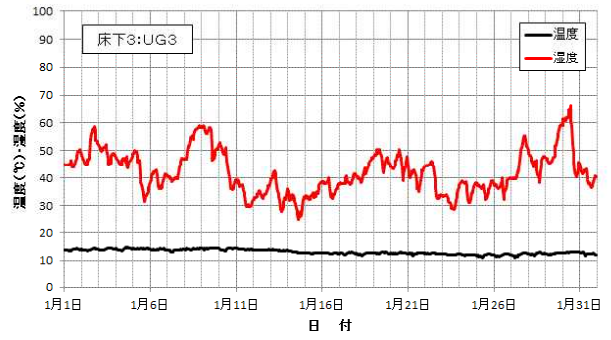
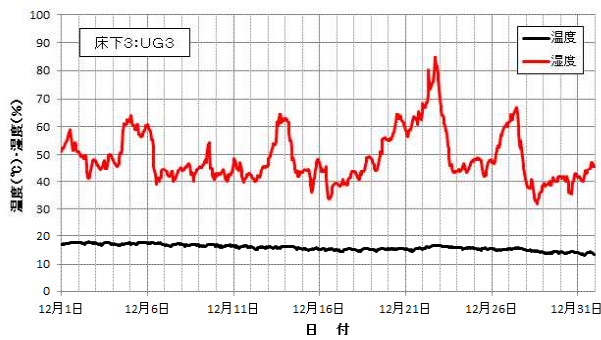
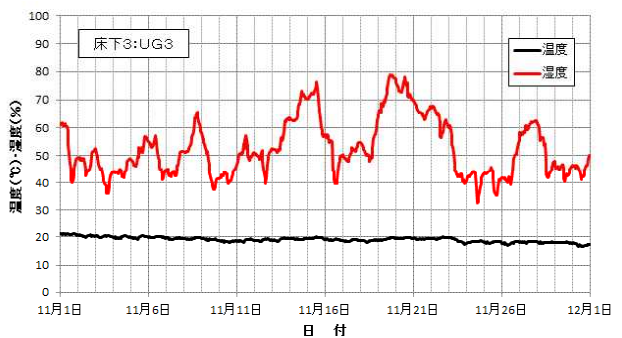
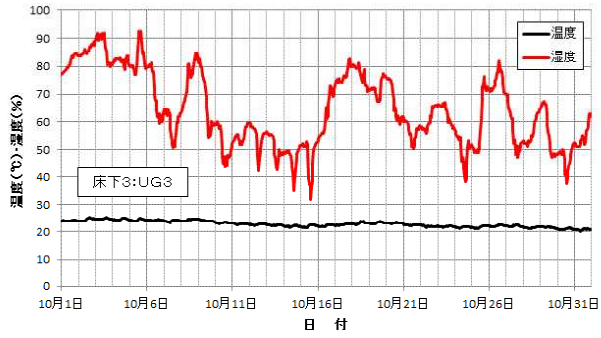
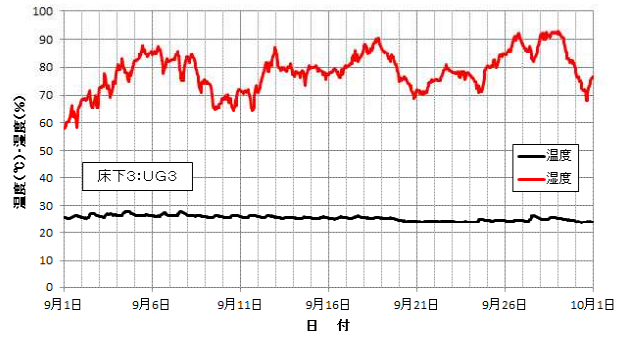
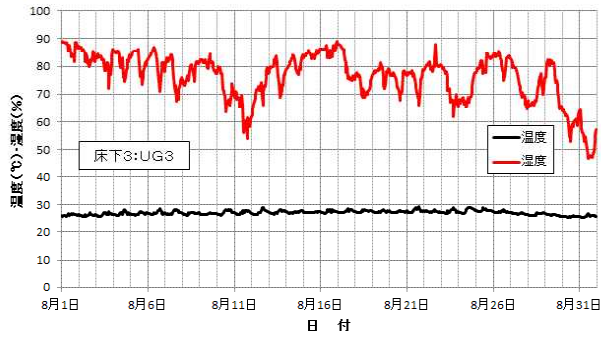
⑩床下2 : UG 2



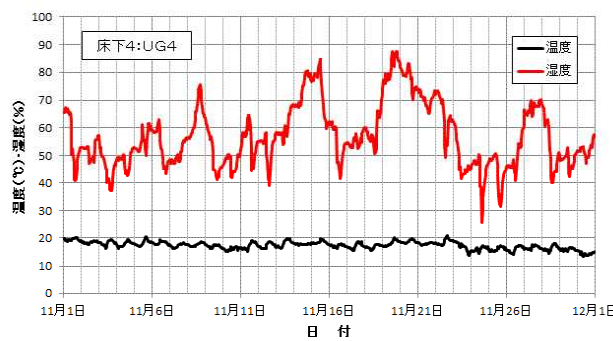
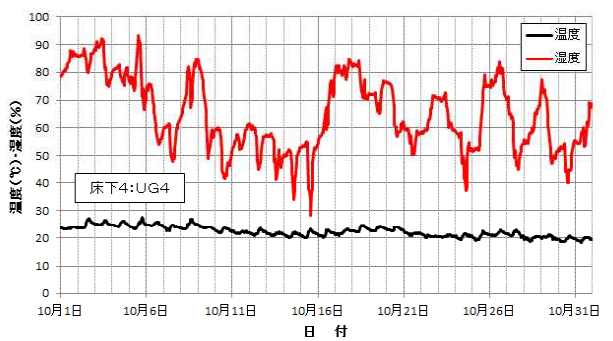
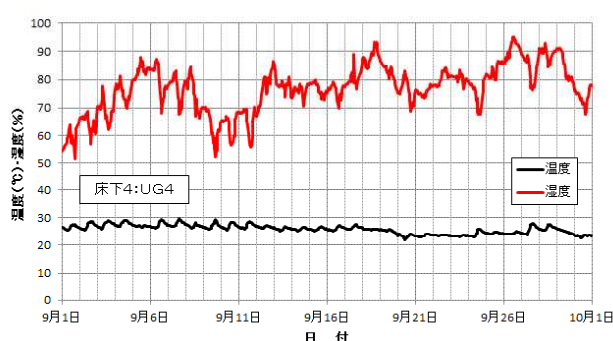
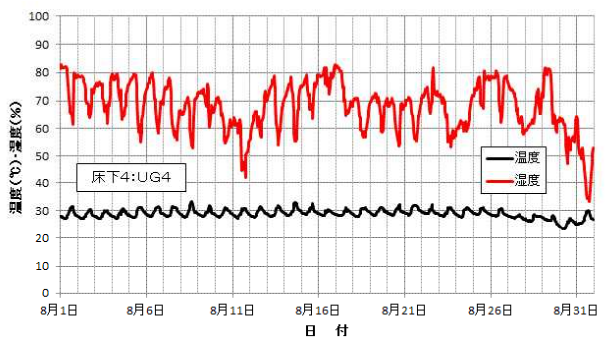
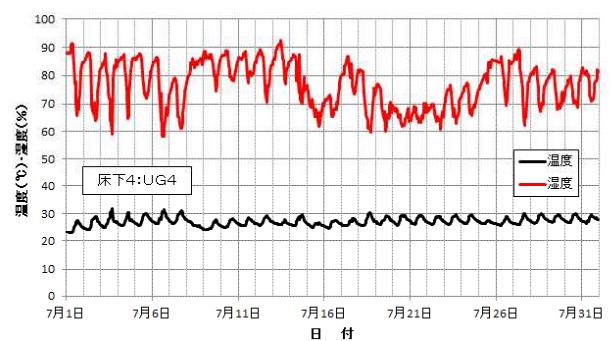
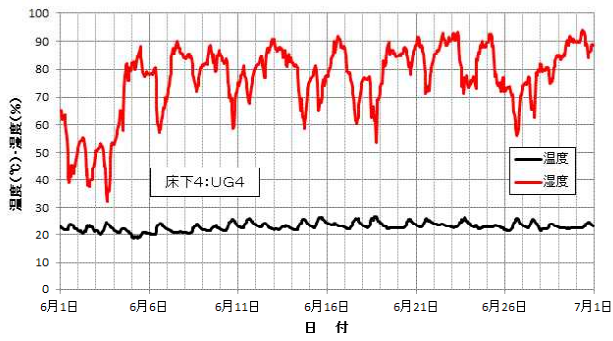
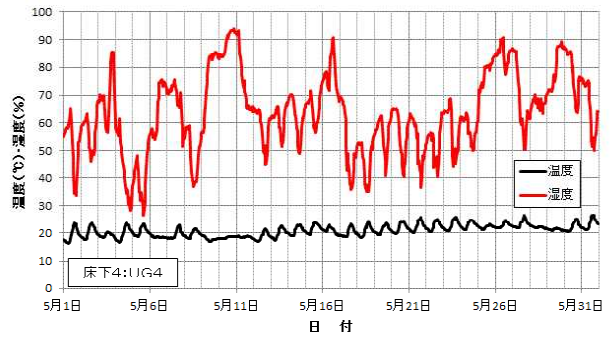
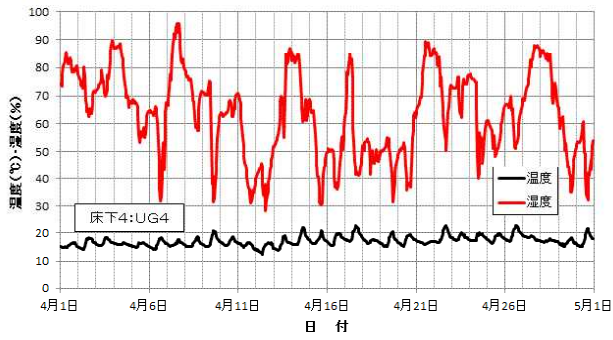


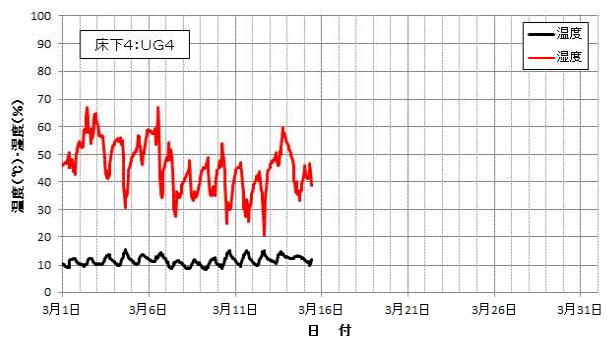
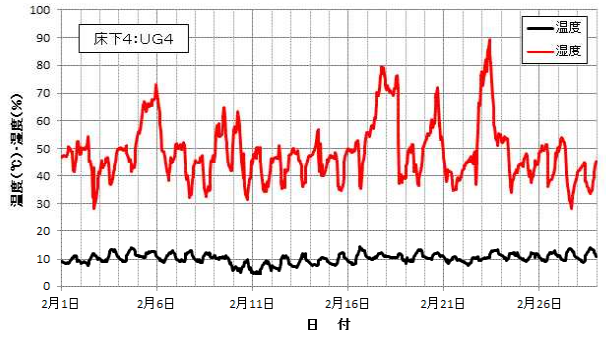
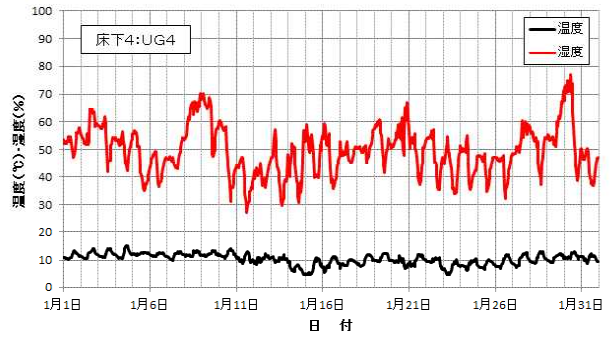
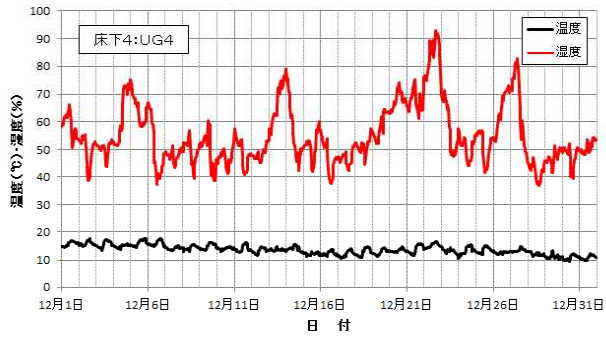
⑪床下3 : UG3



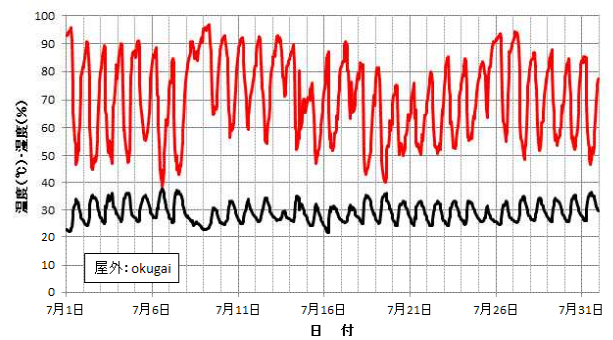
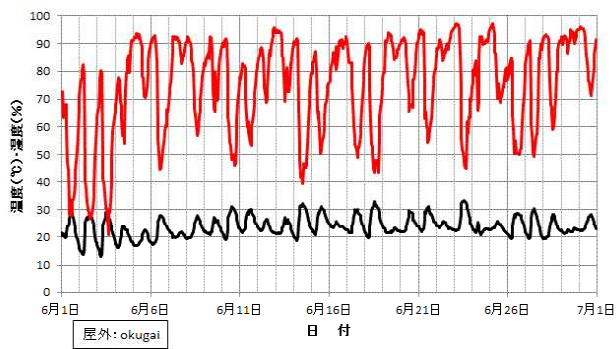
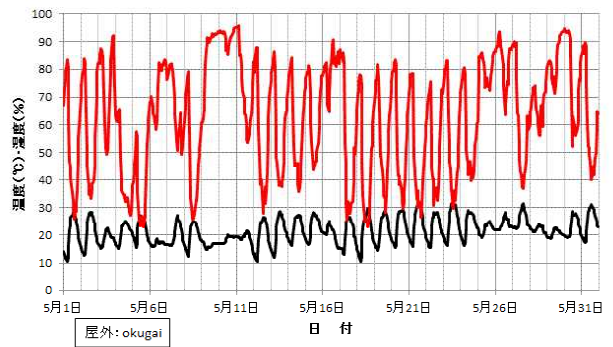
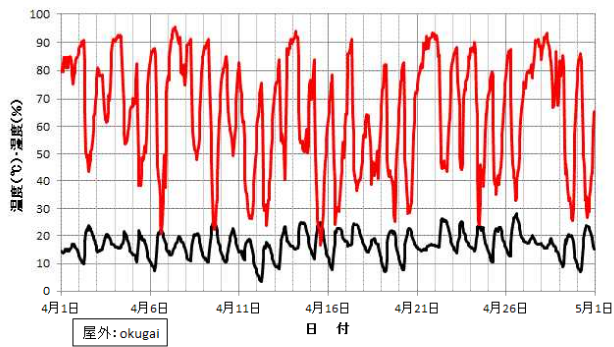


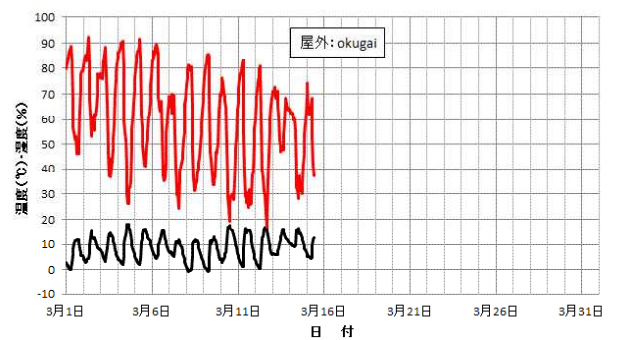
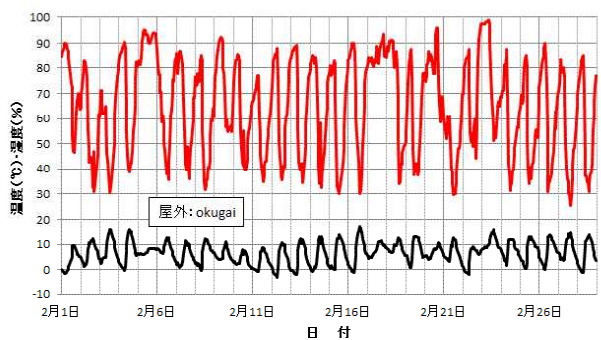
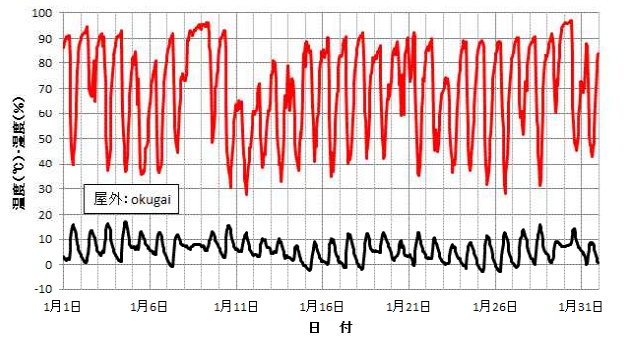
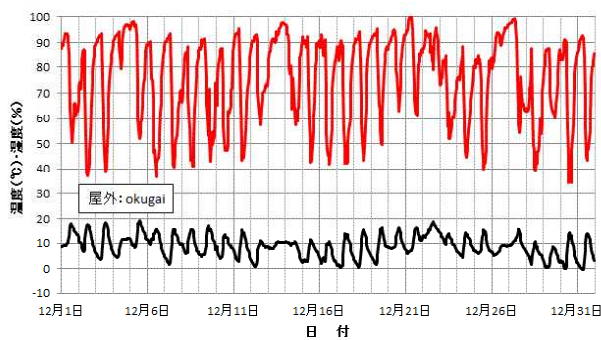
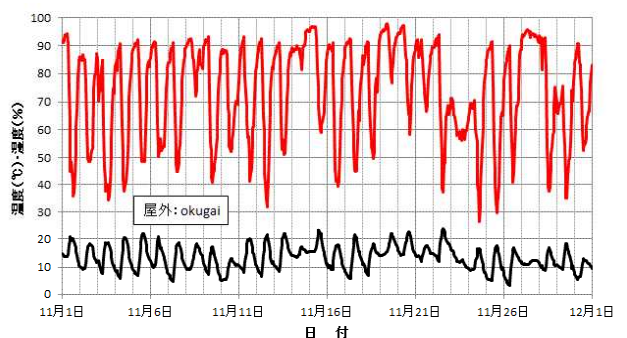
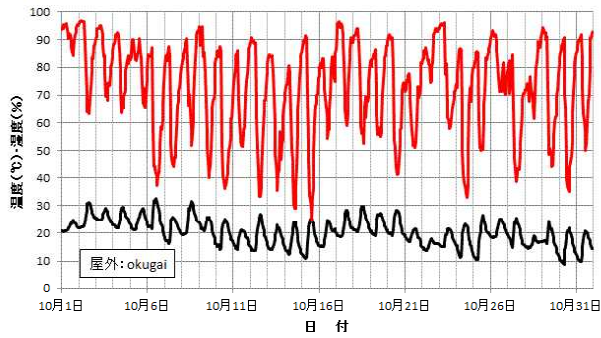
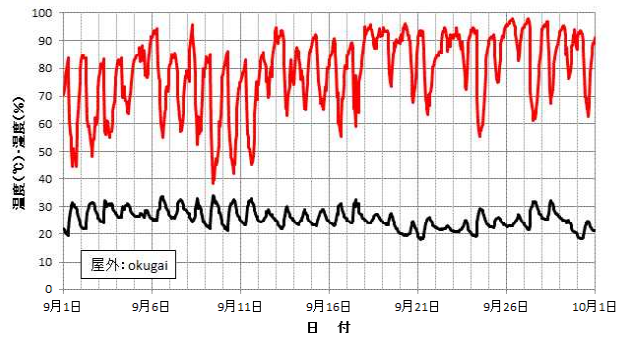
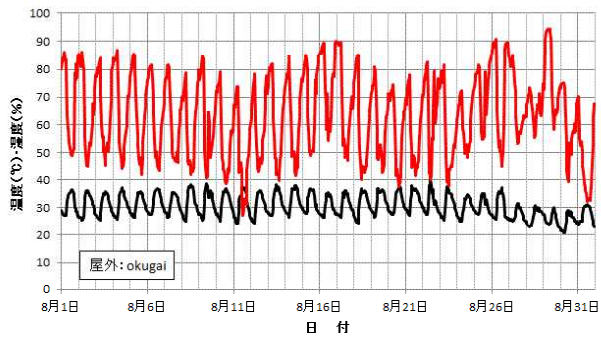
⑫床下4 : UG 4





⑬屋外：okugai





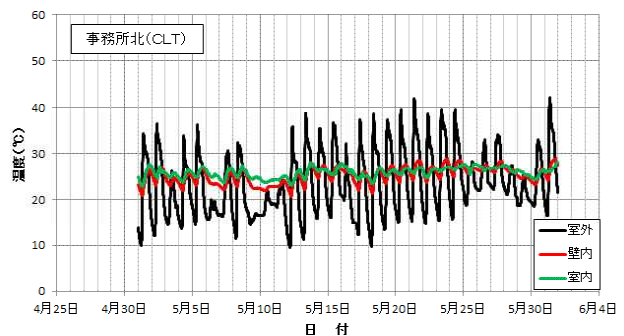
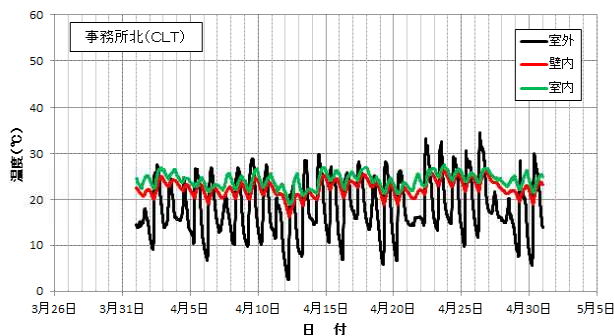
3. 2 温度調査

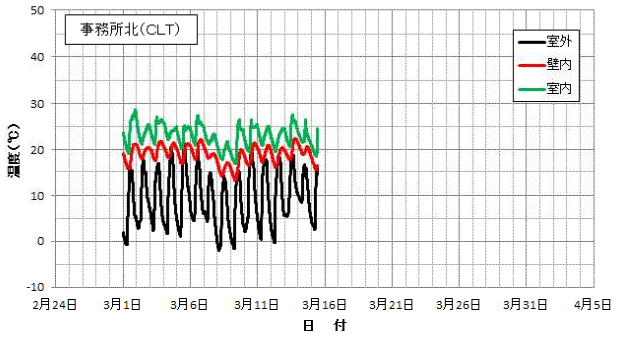
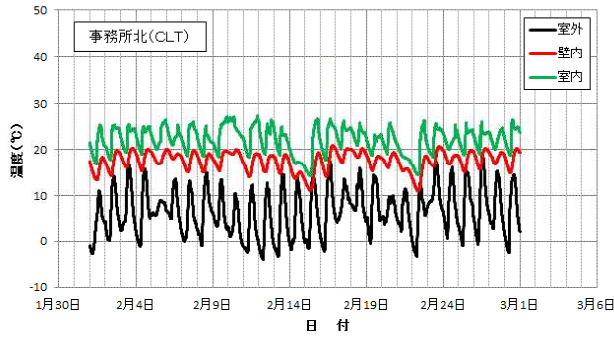
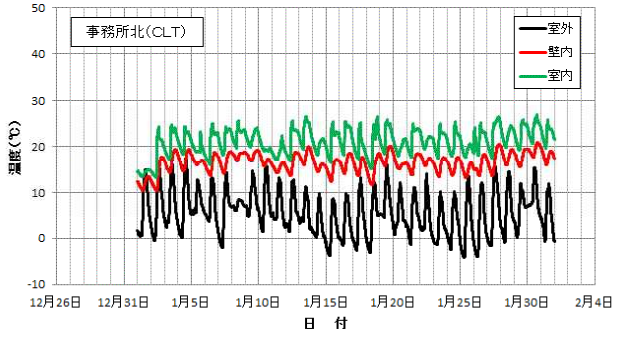
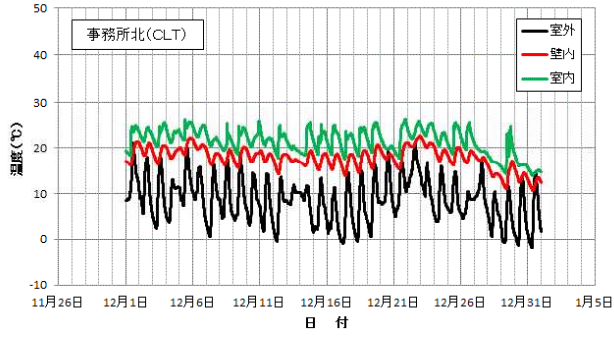
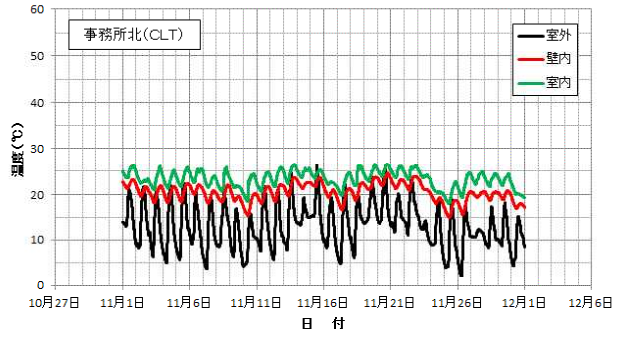
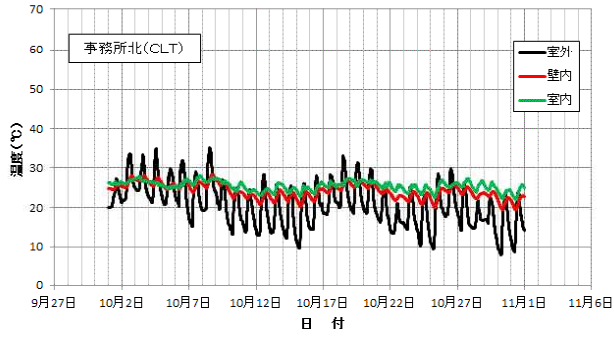
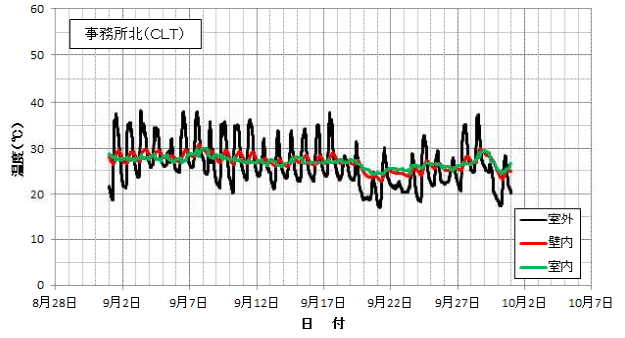
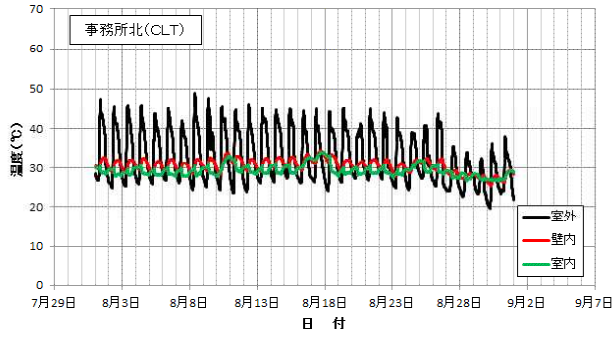
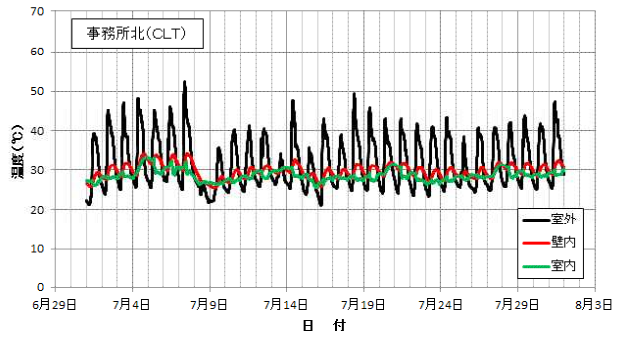
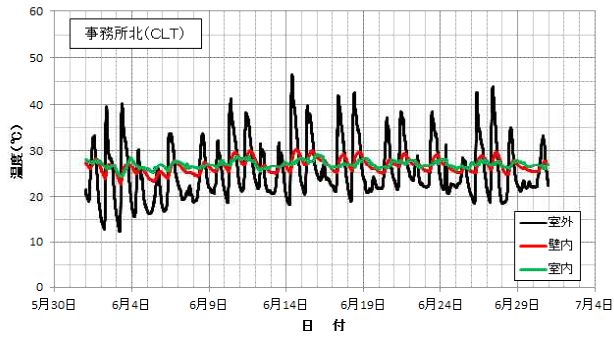
壁体の室外側、壁内、室内側の月別の温度データの集計値を第4表に示す。
また、各計測箇所における月別の温度データの推移を図に示す。

第4表 CLT建築物(カバヤ倉敷北展示場)の壁体の温度データ(月別集計)

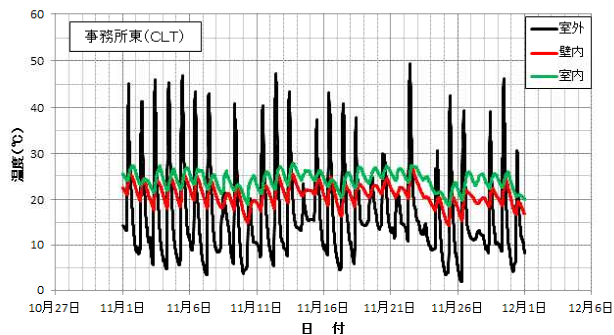
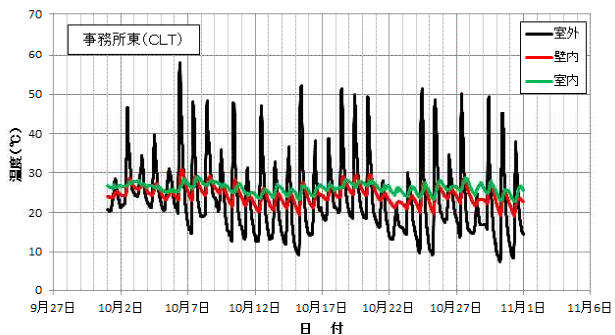
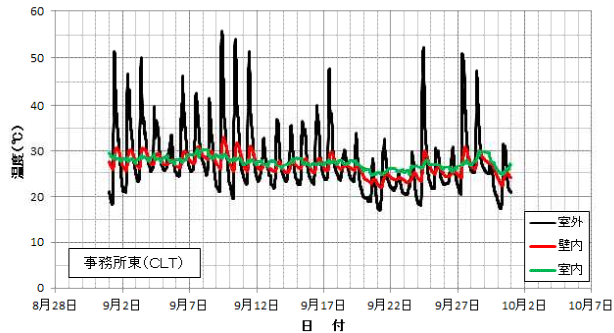
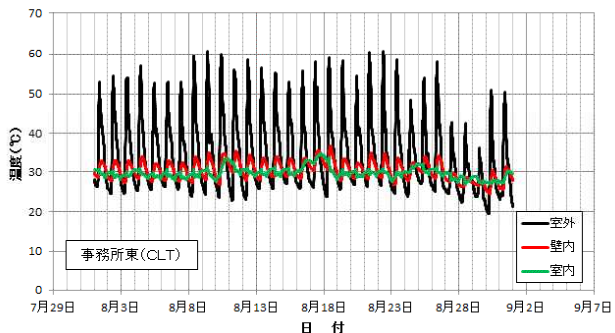
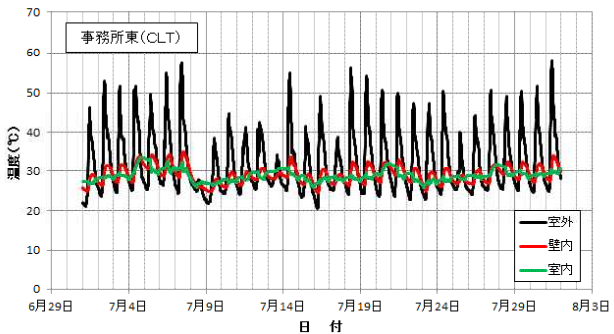
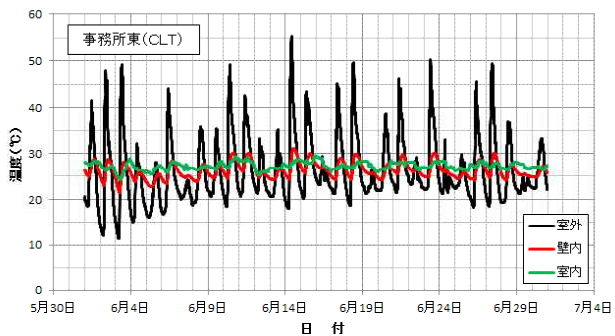
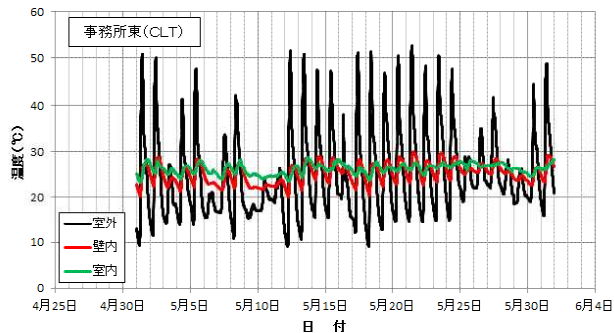
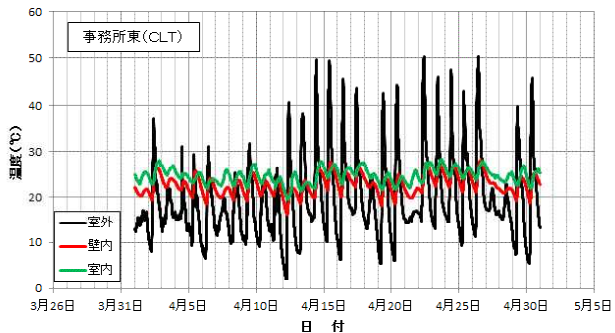
月	項目	事務所北(CLT)			事務所東(CLT)			事務所東(在来)		
		室外側	壁内	室内側	室外側	壁内	室内側	室外側	壁内	室内側
4月	最小値	2.5	16.4	19.0	2.1	16.1	19.5	1.9	15.1	18.2
	平均値	18.1	22.4	24.1	19.3	22.7	24.6	20.1	22.7	24.1
	最大値	34.5	26.4	27.6	50.3	28.0	28.2	50.9	28.8	27.9
5月	最小値	9.5	20.7	22.8	9.1	20.0	23.1	8.9	19.6	22.1
	平均値	23.3	25.2	25.8	24.8	25.1	26.1	24.5	25.3	25.9
	最大値	42.2	28.8	28.0	52.8	29.9	28.8	52.4	31.1	28.6
6月	最小値	12.4	22.6	24.2	11.5	21.5	24.3	11.4	21.3	23.5
	平均値	25.5	26.7	27.0	26.3	26.3	27.3	26.2	26.6	27.0
	最大値	46.5	30.2	29.2	55.4	31.0	29.5	54.1	32.0	29.3
7月	最小値	21.1	25.5	25.5	20.5	24.6	25.7	20.6	25.4	25.4
	平均値	31.8	29.7	28.6	32.3	29.0	28.8	32.0	29.4	28.8
	最大値	52.3	34.2	33.4	57.9	35.0	33.6	57.3	36.7	33.7
8月	最小値	19.7	25.4	26.5	19.6	24.5	26.8	19.7	25.0	26.5
	平均値	32.6	30.5	29.3	34.4	30.4	29.7	34.0	30.6	29.8
	最大値	49.0	34.4	34.0	60.7	36.7	34.8	60.7	36.9	34.9
9月	最小値	16.9	22.7	24.3	16.9	21.9	24.5	16.9	22.5	24.1
	平均値	26.4	27.0	27.0	27.7	26.7	27.4	27.7	27.2	27.3
	最大値	38.0	30.9	30.1	55.8	32.9	30.4	55.1	33.2	31.0
10月	最小値	7.8	19.5	22.1	7.5	19.2	22.7	7.6	18.8	21.7
	平均値	20.7	24.2	25.5	23.3	24.5	26.1	23.3	24.6	25.6
	最大値	35.2	28.2	28.1	58.0	30.9	29.1	58.6	31.5	28.7
11月	最小値	2.1	15.0	18.0	1.8	14.3	18.5	1.8	14.5	17.6
	平均値	13.1	20.4	23.3	16.5	21.1	24.1	16.4	21.2	23.4
	最大値	26.4	24.6	26.6	49.3	27.1	27.8	48.4	27.8	27.5
12月	最小値	-1.7	10.6	13.9	-2.1	10.2	14.5	-2.0	10.0	13.3
	平均値	8.6	17.7	21.3	12.0	18.3	22.1	11.9	18.5	21.3
	最大値	21.1	22.5	26.2	43.2	24.5	26.9	43.6	24.9	26.1
1月	最小値	-4.1	10.4	13.1	-4.3	9.8	13.6	-4.2	10.1	12.8
	平均値	5.6	16.5	21.0	9.2	17.4	21.8	9.2	17.6	20.9
	最大値	17.7	20.9	26.8	43.4	22.3	27.2	42.8	23.5	26.8
2月	最小値	-3.9	10.9	14.2	-4.0	10.3	14.7	-4.0	10.3	13.6
	平均値	6.5	17.4	22.0	9.9	18.4	22.9	9.9	18.6	21.9
	最大値	19.0	20.9	27.2	44.7	23.6	27.5	44.0	24.5	26.9
3月	最小値	-1.9	13.2	16.9	-2.4	13.0	17.5	-2.4	12.8	16.4
	平均値	9.2	18.9	22.9	12.3	19.8	23.7	12.2	19.7	22.8
	最大値	21.3	22.3	28.5	42.3	24.6	28.9	41.7	24.4	27.2

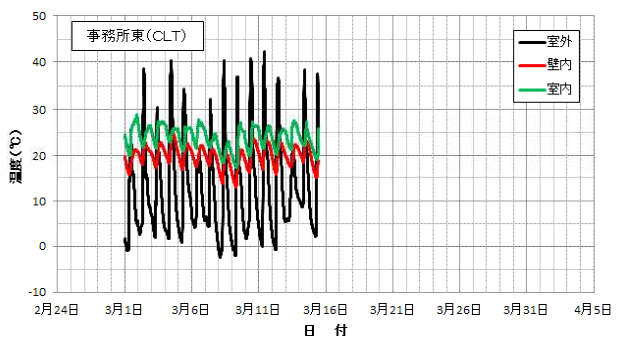
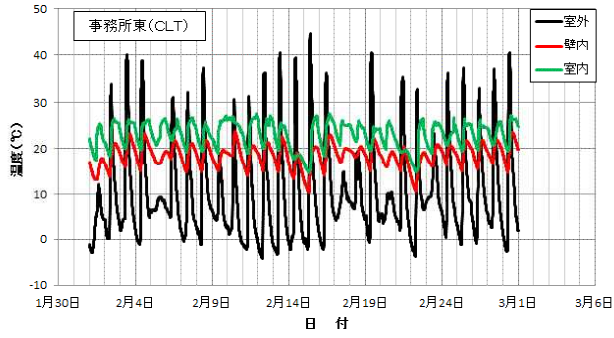
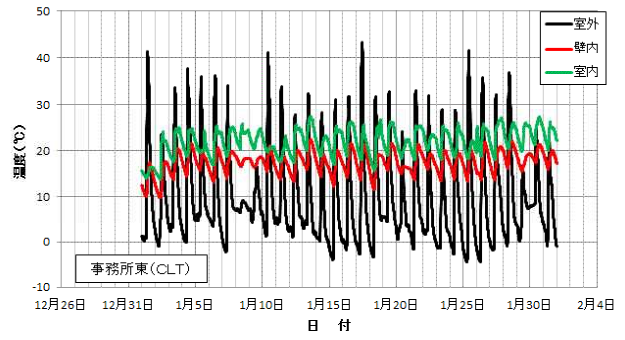
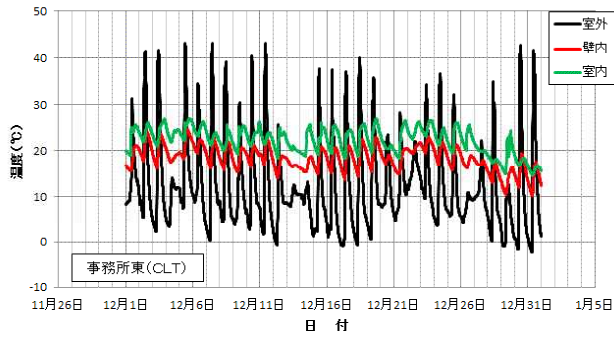
①事務所北 (CLT)



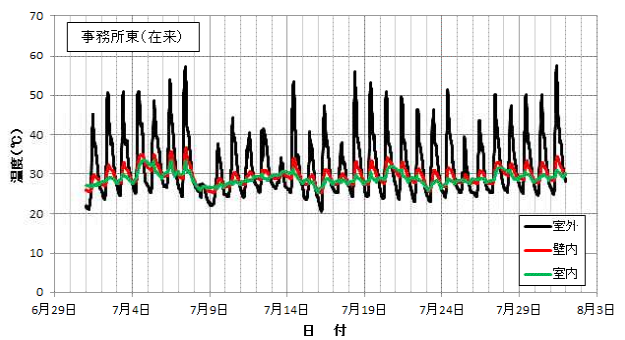
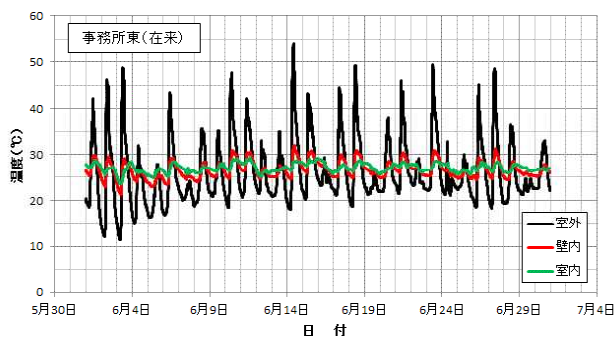
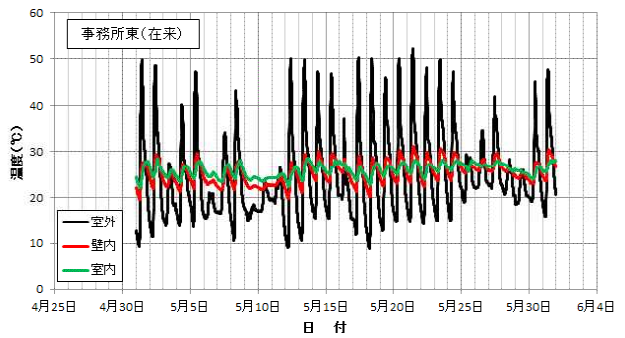
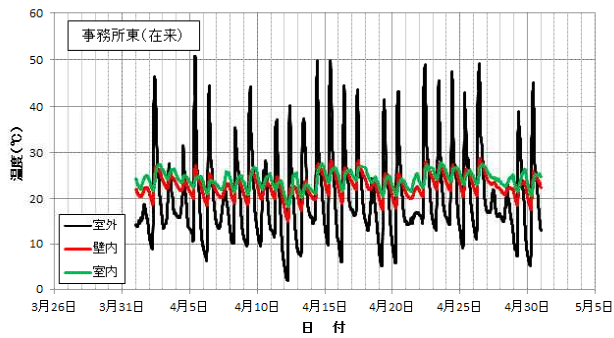


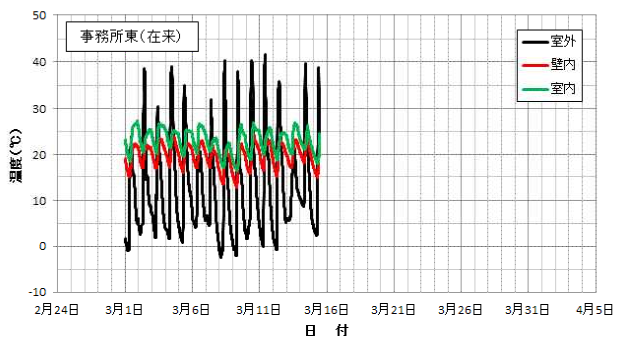
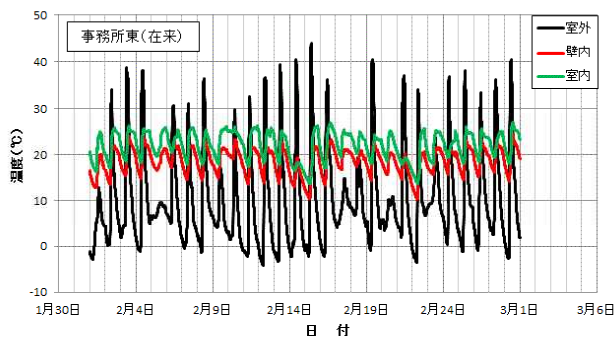
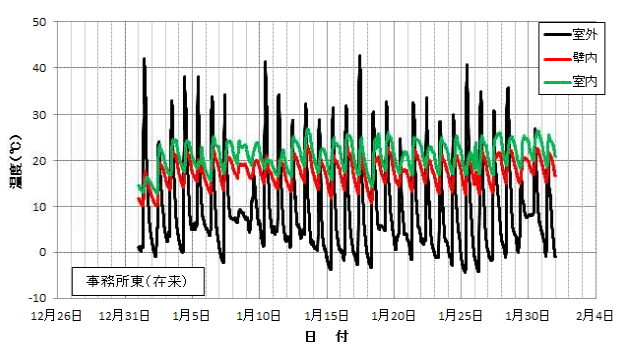
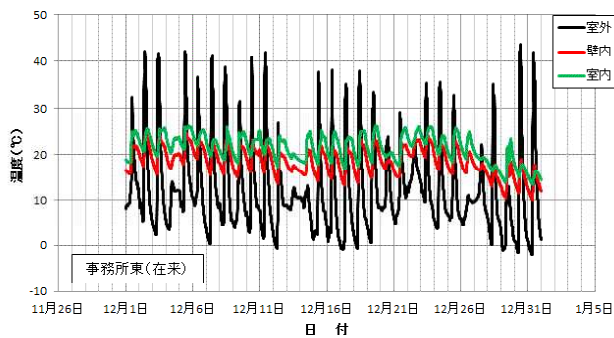
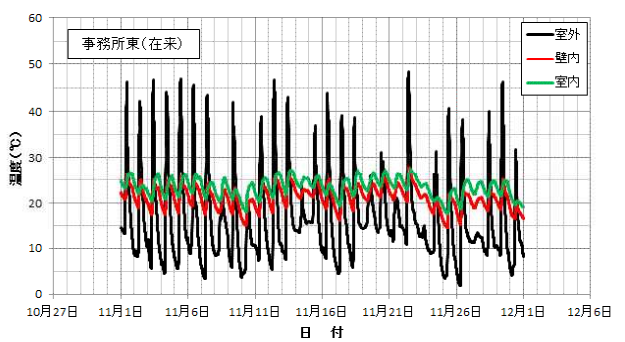
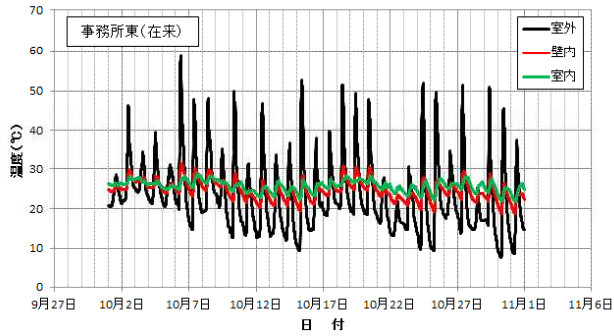
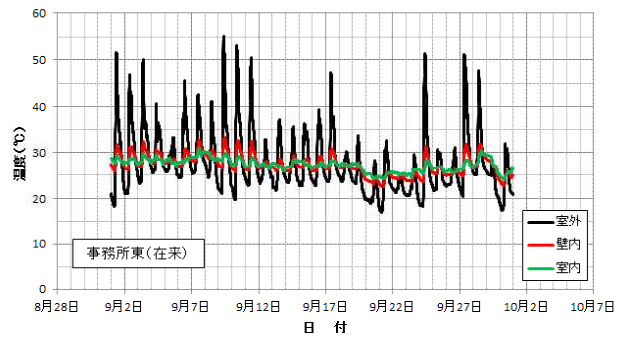
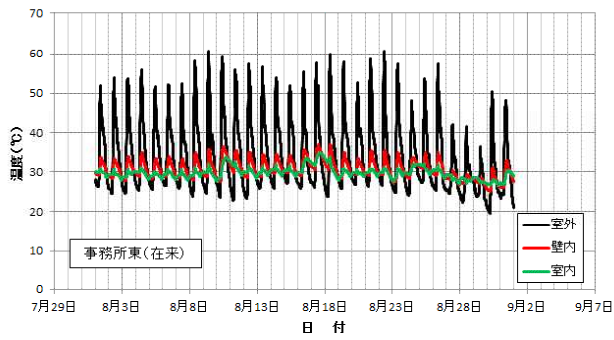
②事務所東 (CLT)





③事務所東 (在来)





3. 3 熱流調査

熱流量データの月別集計値を第5表に示す。

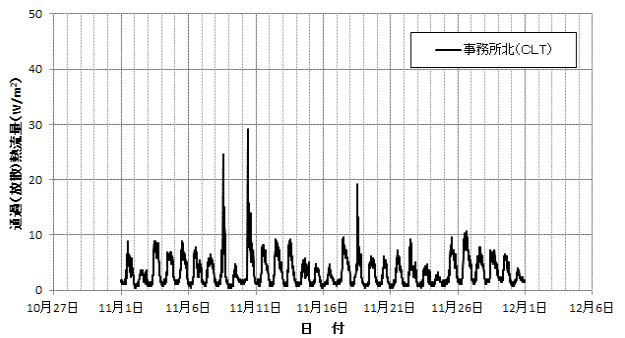
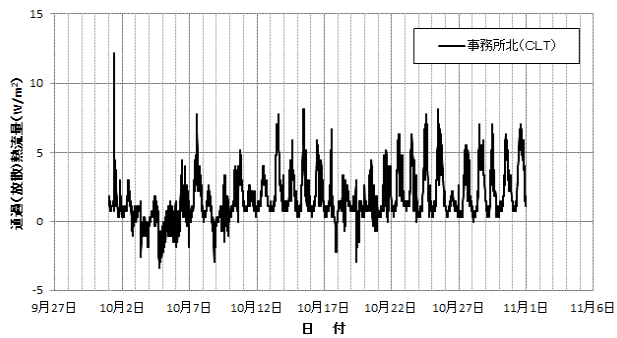
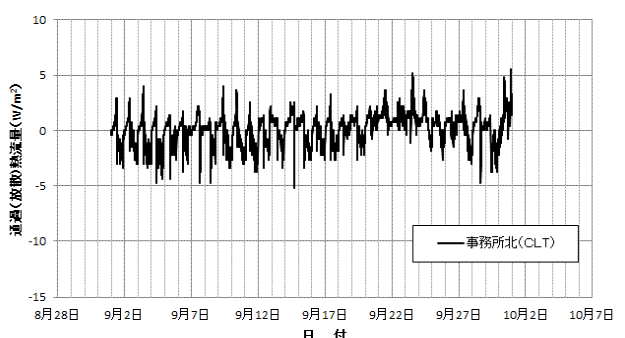
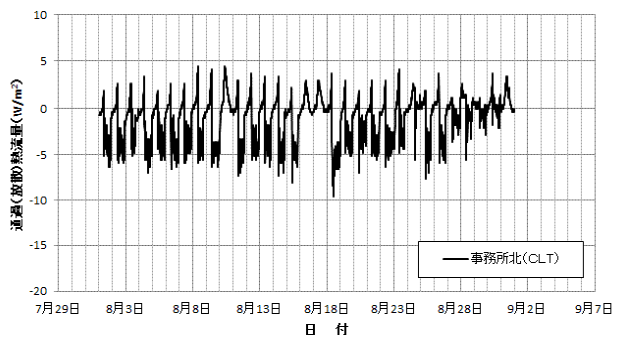
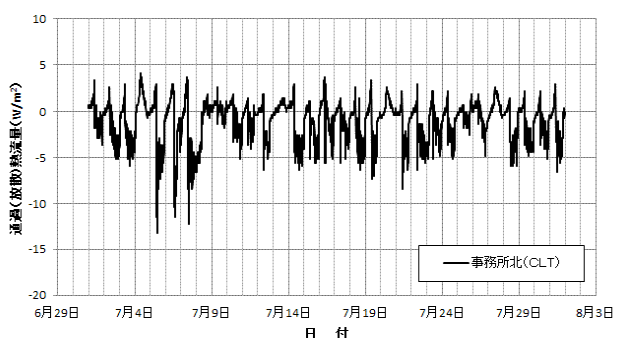
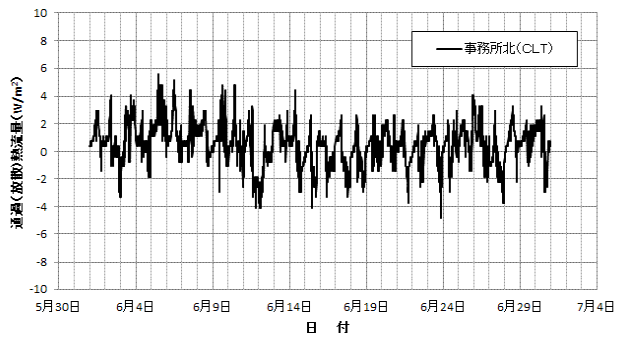
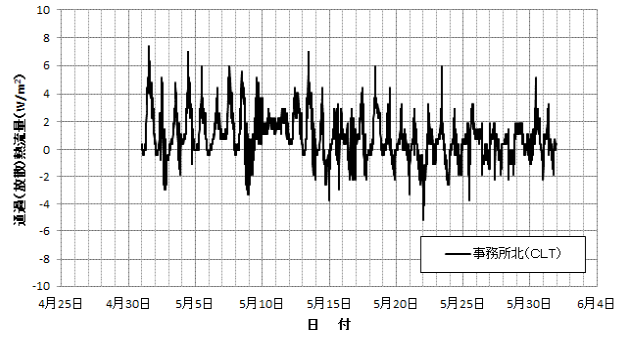
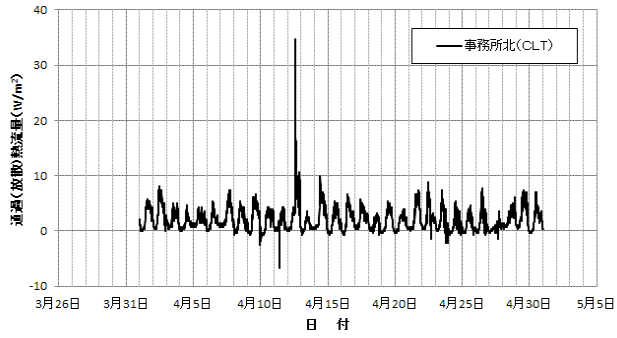
また、各計測箇所における熱流量データの推移を図に示す。

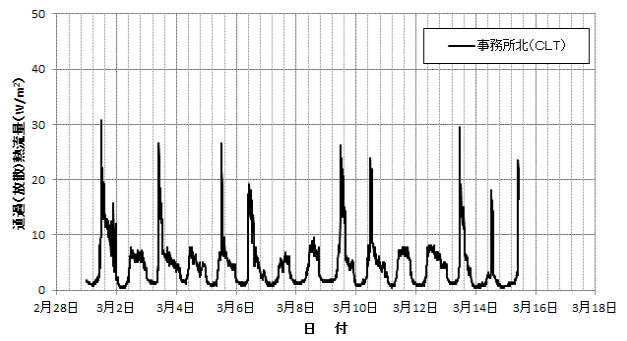
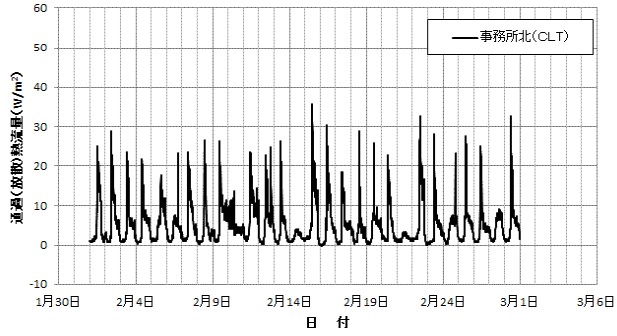
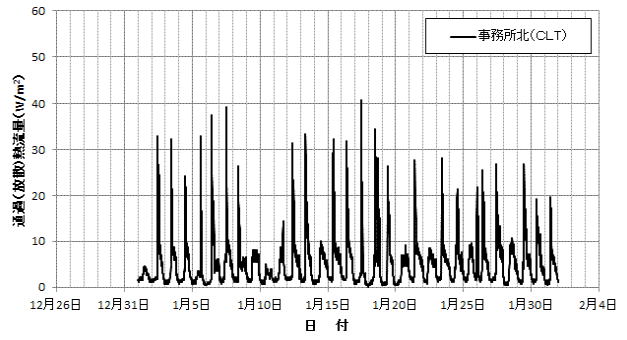
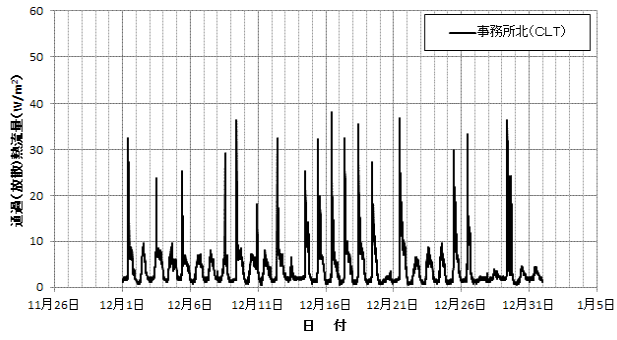
なお、熱流量のプラス側は室内から室外側への熱流量を、マイナス側は室外から室内側への熱流量を示す。

第5表 CLT建築物(カバヤ倉敷北展示場)の壁体の熱流量データ(月別集計)

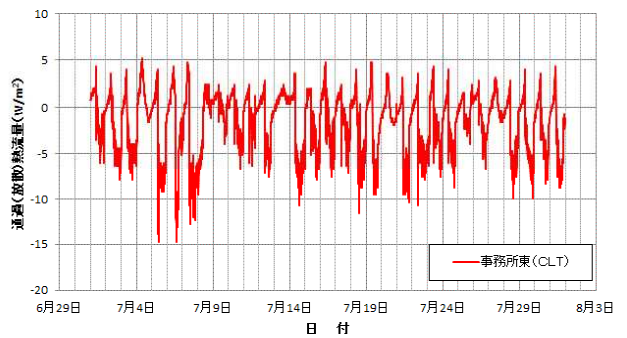
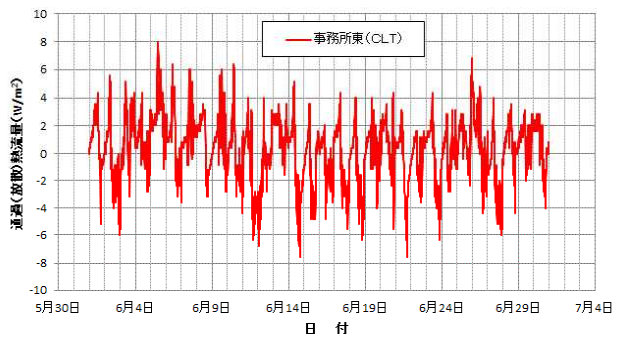
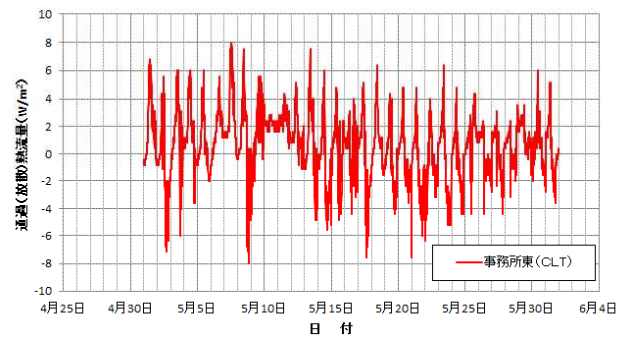
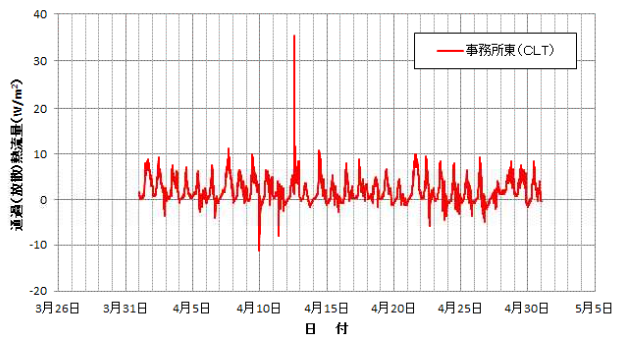
月	項目	事務所北(CLT)	事務所東(CLT)	事務所東(在来)
4月	最小値	-6.7	-11.2	-6.3
	平均値	2.1	1.9	3.5
	最大値	34.8	35.4	47.0
5月	最小値	-5.2	-8.0	-7.2
	平均値	0.9	0.7	1.3
	最大値	7.4	8.0	8.0
6月	最小値	-4.8	-7.6	-8.0
	平均値	0.5	0.3	0.8
	最大値	5.5	8.0	8.5
7月	最小値	-13.3	-14.7	-19.0
	平均値	-1.1	-1.7	-1.8
	最大値	4.1	5.2	4.7
8月	最小値	-9.6	-15.5	-20.3
	平均値	-1.2	-2.4	-2.6
	最大値	4.4	6.0	6.3
9月	最小値	-5.2	-11.2	-9.7
	平均値	0.1	-0.3	-0.1
	最大値	5.5	7.6	6.8
10月	最小値	-3.3	-6.8	-8.9
	平均値	1.7	1.1	2.3
	最大値	12.2	11.2	10.6
11月	最小値	0.4	-2.4	-1.3
	平均値	3.3	3.1	5.1
	最大値	29.2	41.4	36.8
12月	最小値	0.4	-2.4	-1.3
	平均値	4.1	4.0	6.4
	最大値	38.1	53.4	51.6
1月	最小値	0.0	-3.2	-2.1
	平均値	5.1	4.9	7.7
	最大値	40.7	51.8	53.7
2月	最小値	-0.4	-2.4	-0.4
	平均値	5.1	4.9	7.9
	最大値	35.9	49.0	51.2
3月	最小値	0.4	-2.4	0.8
	平均値	4.4	4.3	7.2
	最大値	30.7	40.6	39.4

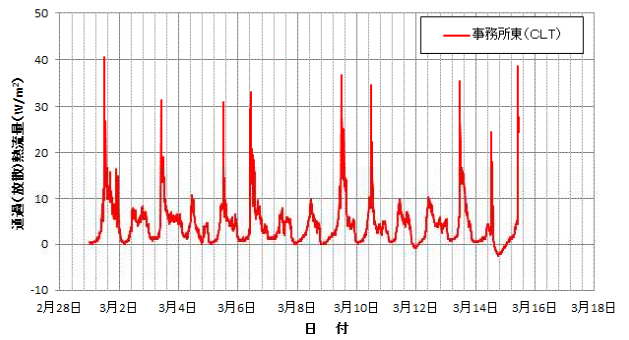
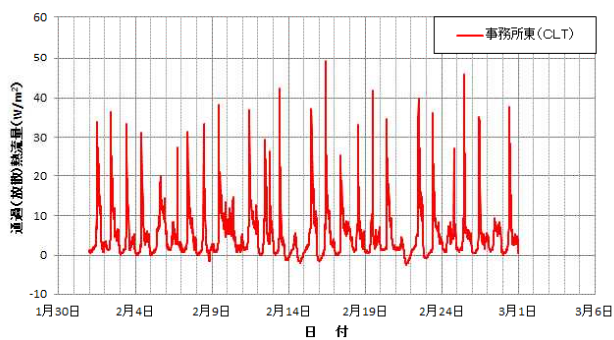
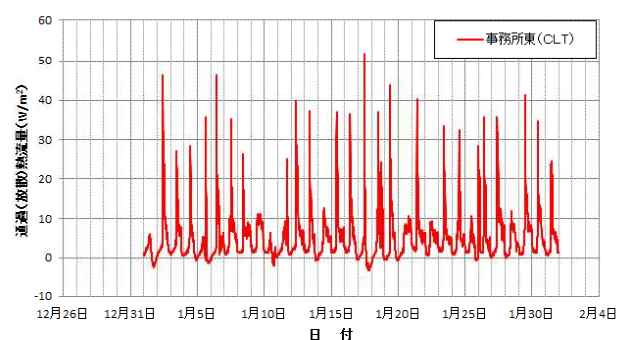
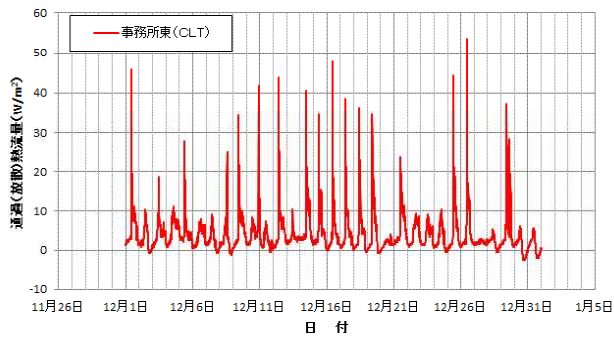
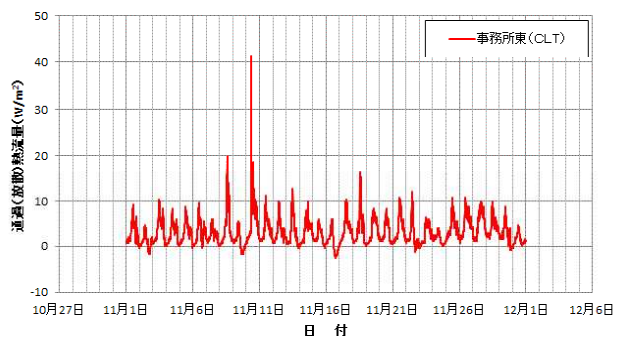
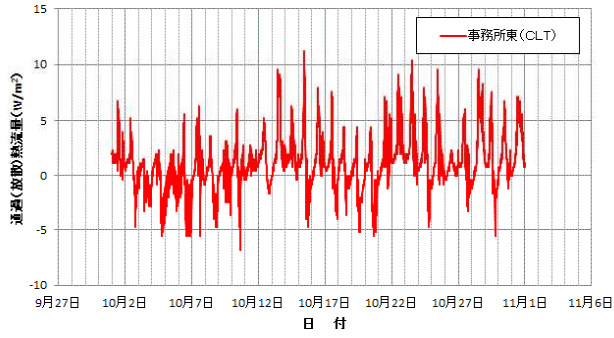
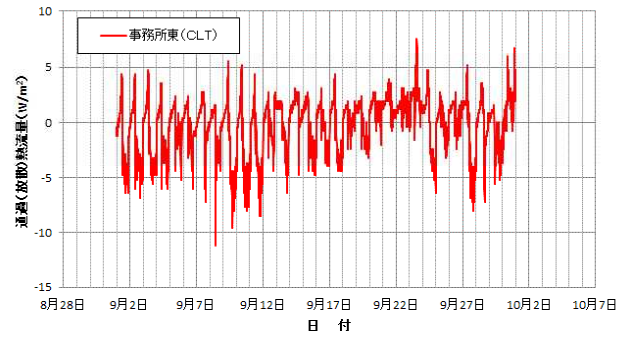
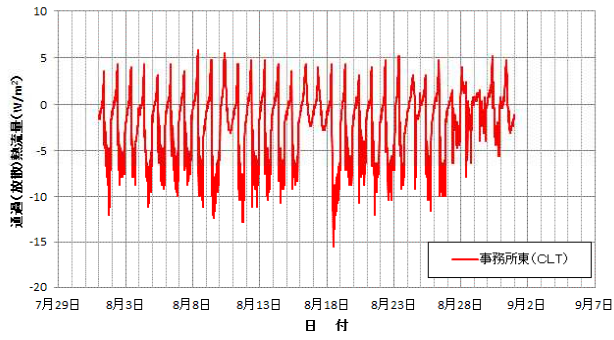
①事務所北 (CLT)



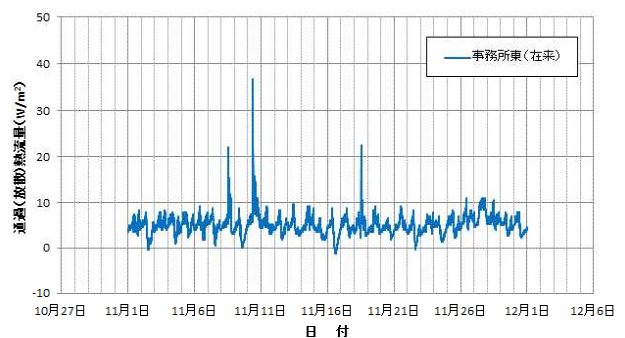
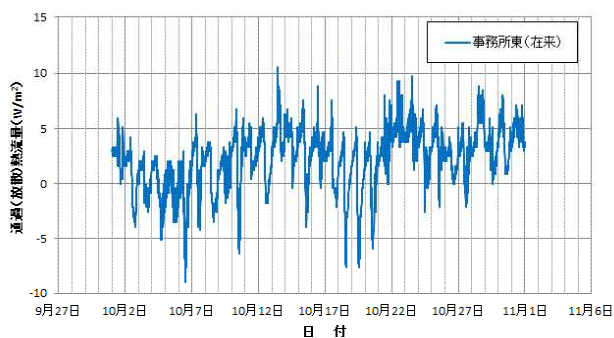
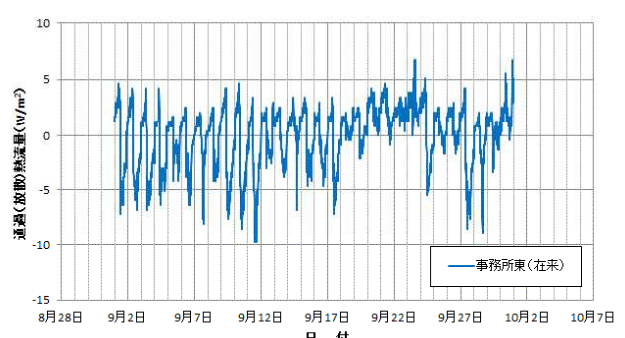
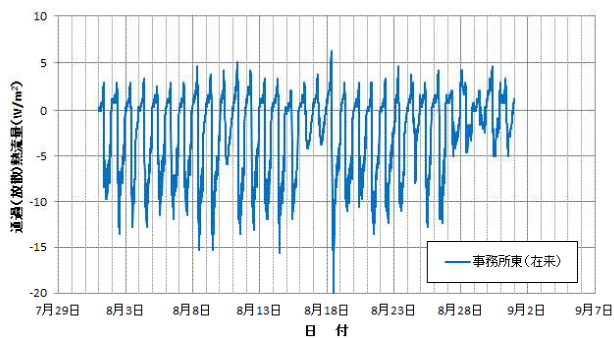
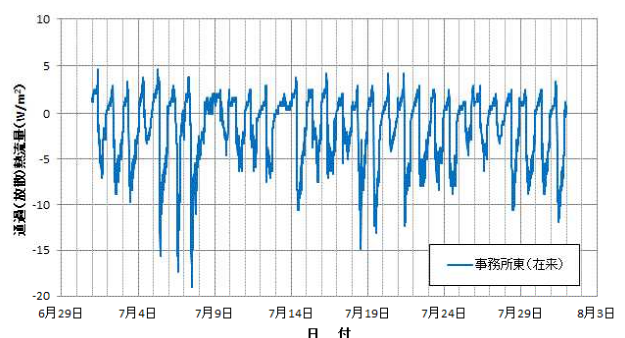
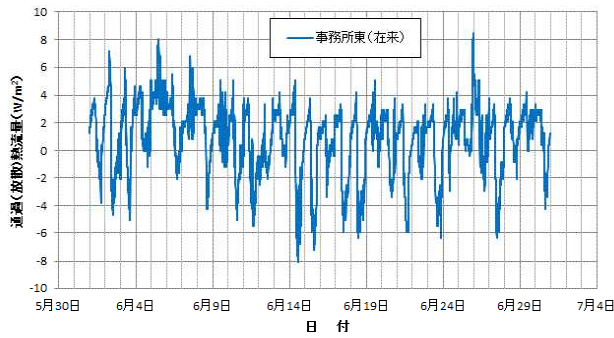
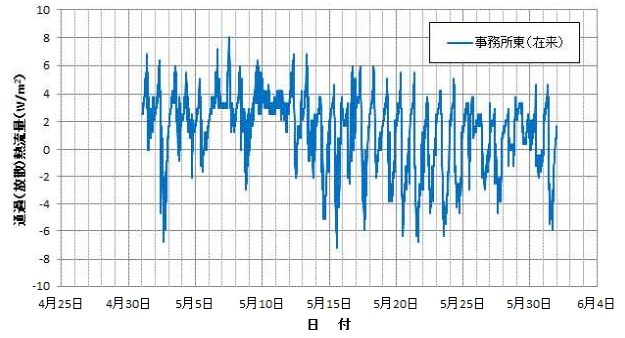
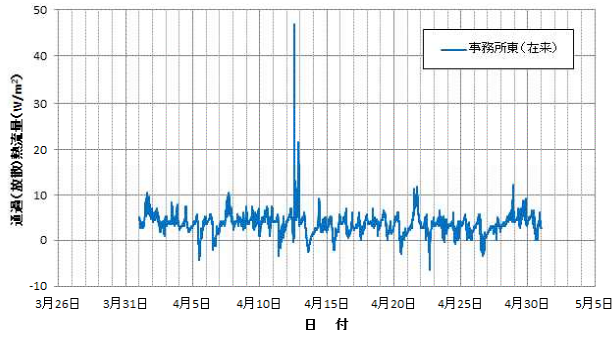


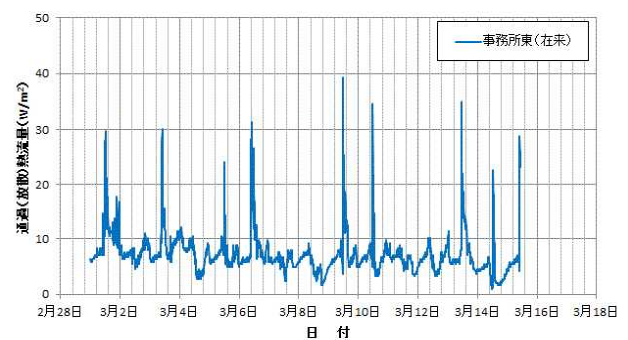
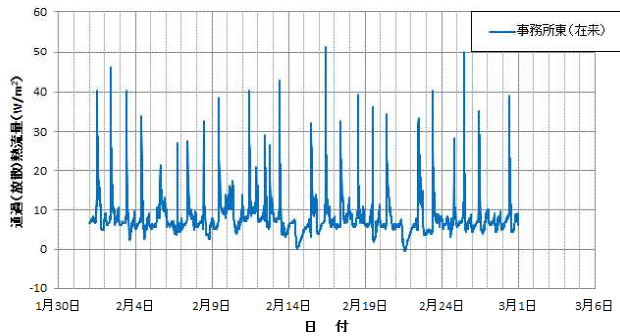
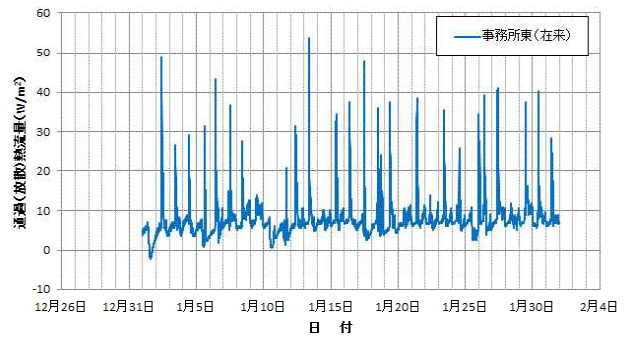
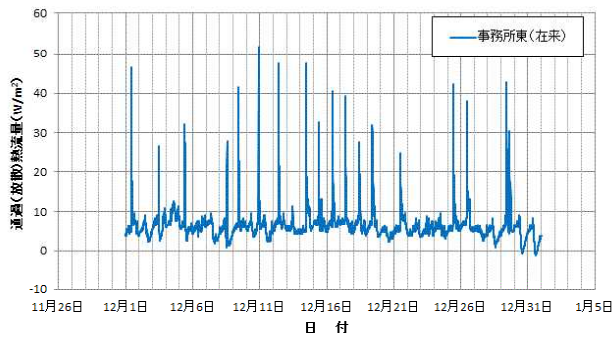
②事務所東 (CLT)





③事務所東（在来）





3. 4 含水率調査

含水率調査結果を第6表に示す。

含水率は、事務所北面（1 F S 1）を除いて年間を通してほぼ一定の値で推移していた。

第6表 CLT建物の含水率調査結果				
調査日	カバヤ倉敷北展示場			
	1FS1	1FS2	2FH	2FS
2016/3/23	12.5%	11.0%	11.0%	12.0%
2016/4/11	13.0%	11.5%	10.5%	11.0%
2016/5/18	12.0%	10.5%	10.5%	10.5%
2016/6/15	12.0%	10.5%	10.0%	10.5%
2016/7/12	15.0%	11.0%	10.5%	10.5%
2016/8/9	13.5%	10.5%	10.5%	11.0%
2016/9/20	14.5%	11.0%	11.0%	11.0%
2016/10/11	13.0%	10.5%	10.5%	10.5%
2016/11/8	12.0%	10.5%	10.5%	11.0%
2016/12/21	11.5%	10.5%	10.0%	11.0%
2017/1/18	11.0%	10.5%	9.5%	11.0%
2017/2/15	10.5%	10.0%	9.5%	10.5%
2017/3/15	10.5%	10.0%	9.0%	11.0%