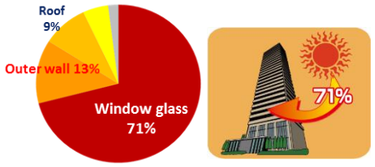
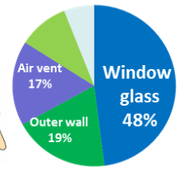
Basic information about Thermal insulation for building

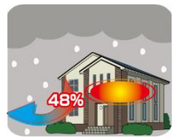
Summer Window71%+Wall13%+Roof9%=**93%**



Where does heat come from when the whole building is 100%?

Winter Window 48%+Wall19%+air-vent17%=**90%**

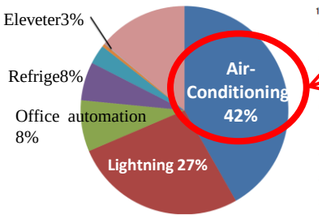




Where does heat escape from when the whole building is 100%?

Office Building

In the office building, Power consumption ratio

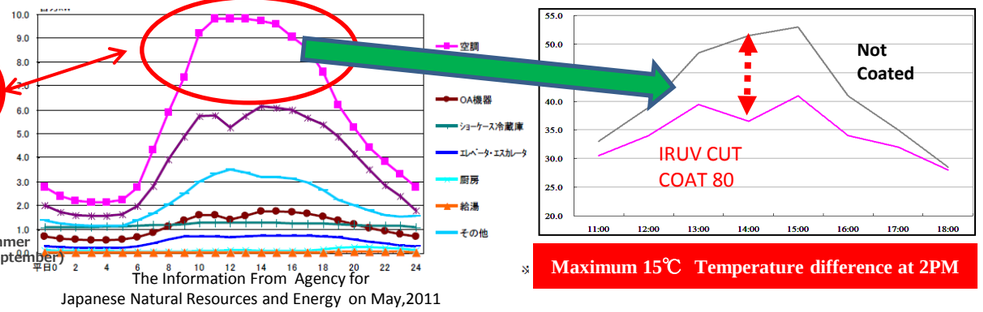


Power Peak Period / Time Zone in Summer
(Around 14:00 on weekdays from July to September)

Power Demand by Time (by Equipment)

Demand for electric power at hourly intervals

Peak hour cut of the Air-Conditioning at 10AM～4PM



※ **Maximum 15℃ Temperature difference at 2PM**

The Information From Agency for Japanese Natural Resources and Energy on May,2011

For Measures to reduce air conditioning cost 「Power Saving Green Coat System」

30% Reduction plan of air conditioning cost with energy saving collaboration strategy

World No,1 Product ,Sold to 20 countries or more

Heat insulating coat for window glass
「IRUV Cut Coat 80」

＋

Energy saving coating of air conditioning outdoor unit

Energy saving painting of outdoor unit & surrounding area
「Energy saving cover coat」 Japanese Patent Publication No.2015－117924
For outdoor unit Japanese Patented No.60382450
「Energy saving cover device」

◆Energy-saving Basic strategy ①
①Energy-Saving 20～30% by IRUV Cut Coat 80 (IR Cut 80～85%)

◆Collaboration Strategy②, ③
②15% reduction of air conditioning cost by Energy-Saving Cover Coat (thermal insulation paint around the outdoor unit)
③15% reduction by Energy-Saving Cover device (installing outdoor unit cover)

Basic Strategy①

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Collaboration Strategy②

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Collaboration Strategy③

Target example for Energy-Saving Green Coat System

Restaurant

Convenience Shop

Shopping Mall

Hotel

Casino facility

Office building

Government Facilities
School

Hospital・
Nursing House

Airport・Station

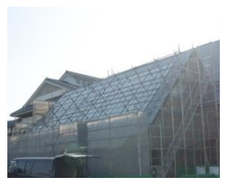
Factory・ Warehouse

Home Center

Ceremonial facility

Car Dealer show room

Glazed facility



SPA,Hot Sprig facility

Sketch

Sketch Co. Ltd.
3F, Chaco Paper Hall, 2-25-10,
Asakusabashi, Taito-ku, Tokyo 111-0053 Japan
TEL +81-(0)3-5825-6503 FAX +81-(0)3-5825-6504
http://sketch-english.jimdo.com/

Sketch

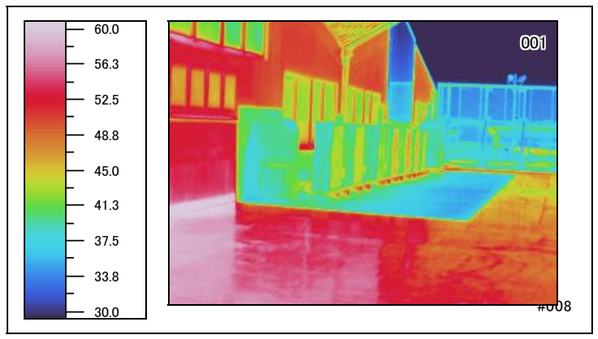
節電 Power Saving Green Coat System

Energy-Saving Green Coat System①

'Energy-Saving Cover Coat' & 'Energy-Saving Cover Device'

Problem１）Air conditioning load increases, leading to an increase in air conditioning cost because Air Conditioner Outdoor unit gets hot due to temperature rise in summer and it cools with temperature decrease in winter

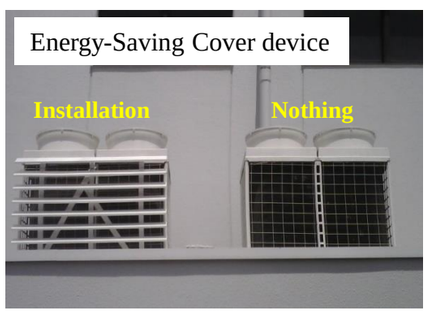
Solution１）Applying 'Energy-Saving Cove Coat'⇒15% Energy-Saving by Thermal Insulation in Summer & Winter

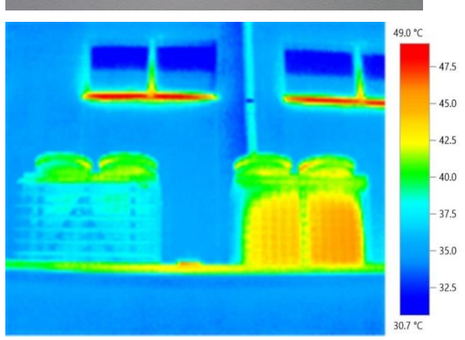


※* Reduction of electric power by thermal barrier coating to a roof outdoor unit of a game arcade

	Before	After				0.375 kwh/co2
	Power consumption kwh		Reduced power	Reduction amount	Reduction rate	CO2 reduction amount
	2013	2014	kwh	21.8JPY /kwh		Kg-CO2/month
Jan	50,466	43,596	6,870	149,766	13.6%	2,576.3
Feb	47,844	41,238	6,606	144,011	13.8%	2,477.3
March	43,608	37,098	6,510	141,918	14.9%	2,441.3
April	43,800	37,865	5,935	129,383	13.6%	2,225.6
May	42,576	36,592	5,984	130,451	14.1%	2,244.0
June	42,510	34,228	8,282	180,548	19.5%	3,105.8
July	44,298	37,590	6,708	146,234	15.1%	2,515.5
Aug	49,350	41,238	8,112	176,842	16.4%	3,042.0
Sep	48,468	40,168	8,300	180,940	17.1%	3,112.5
Oct	40,344	33,491	6,853	149,395	17.0%	2,569.9
Nov	38,736	30,227	8,509	185,496	22.0%	3,190.9
Dec	41,046	32,547	8,499	185,278	20.7%	3,187.1
Total	533,046	445,878	87,168	1,900,262	16.4%	32,688
Amount	11,620,403	9,720,140				
Average	968,367	810,012	7,264	158,355		2,724

Solution2）Installing 'Energy-Saving Cover Device'⇒Because Energy saving cover coat & anti-mold clean coat is applied to Cover device, energy saving is averaged 10% by Heat reflection & thermal insulation effect in the summer and the winter, furthermore It will send clean air into the room by anti-fouling coat = It is called Super Glass Barrier





※Temperature difference from the outside temperature

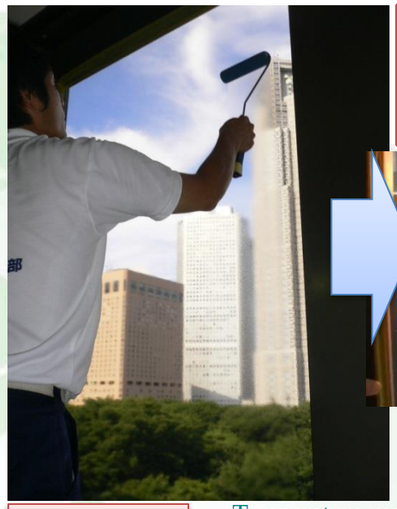
2015	time	Energy-Saving Cover Nothing ℃	Energy-Saving Cover Install ℃	Temperature difference	Outside temperature ℃	Nothing ℃	Install ℃
Sep,28th	13:20	40.0	33.7	−6.3	29.6	10.4	4.1
Sep,29th	9:00	48.5	32.3	−16.2	26.8	21.7	5.5
Sep,30th	10:30	47.3	32.3	−15.0	25.2	22.1	7.1
Oct 1st	8:20	37.8	26.0	−11.8	23.2	14.6	2.8
Oct 2nd	11:40	50.8	34.3	−16.5	27.5	23.3	6.8
Oct3rd	11:00	49.3	33.0	−16.3	27.2	22.1	5.8
Oct 4th	10:30	47.7	33.0	−14.7	27.5	20.2	5.5
Oct 5th	10:40	32.8	23.8	−9.0	20.0	12.8	3.8
Oct 5th	9:30	44.5	28.2	−16.3	22.5	22.0	5.7
Oct 6th	10:00	44.2	28.5	−15.7	22.0	22.2	6.5
Oct 7th	9:00	46.2	28.8	−17.3	24.3	21.9	4.5
Oct 8th	10:20	49.2	33.5	−16.2	26.3	22.9	7.2
Oct 9th	9:10	32.7	24.0	−8.7	20.4	12.3	3.6
Oct 10th	12:20	25.8	20.0	−5.8	19.2	6.6	0.8
Oct 11th	10:40	46.2	29.0	−17.2	23.9	22.3	5.1
Total		643.0	440.4	−203.0	365.6	277.4	74.8
Average		42.87	29.36	−13.53	24.4	18.5	5.0

Energy-Saving Green Coat System②

'IRUV Cut Coat 80'

Problem２）Room temperature change due to heat entering and leaving through the window glass is becoming the biggest factor to increase air conditioning load because

Solution3）Applying IRUV Cut Coat 80 ⇒20%~30% Energy-Saving by Thermal Insulation in Summer & Winter



What is 'IRUV Cut Coat 80'?

Thermal insulation glass coating solution for window glass by roller application. Functionality up to IR Cut80%~85%、UV Cut 99%, It is 15years durability, Twice the durability of the film

Uncoated
78℃

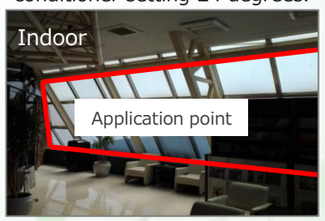
Coated
50℃

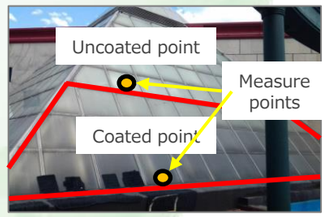
Uncoated
VLT 91%
IR Cut 17%
UV Cut13%

Coated
VLT 75%
IR Cut 83%
UV Cut99%

In Summer Temperature measurement Record in Japan

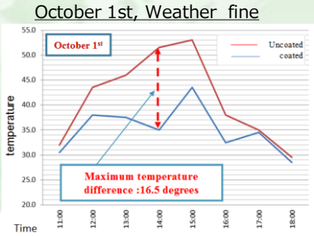
In the summer, the inside of this room is too hot, nobody wants to enter. Even if the air conditioner is set to 19 ° C it will be hot air. After application, We measure temperature for 20days. A temperature difference of 17 degrees at maximum was confirmed. After application, there was a report that it felt cool even at air conditioner setting 24 degrees.





【Temperature measurement period】From Oct 1st,2013～Until Oct 22th,2013

October 1st, Weather fine



Recording date and time	Coated Temperature(℃)	Uncoated Temperature(℃)	Temperature difference Temperature(℃)	Outside temperature Temperature(℃)	Weather
2013/10/01 11:00:01	30.5	32.0	1.5	26.6	Clear
2013/10/01 12:00:01	38.0	43.5	4.5	27.5	
2013/10/01 13:00:01	37.5	46.0	8.5	27.9	
2013/10/01 14:00:01	35.0	51.5	16.5	29	
2013/10/01 15:00:01	43.5	53.0	9.5	29.9	
2013/10/01 16:00:01	32.5	38.0	5.5	28.5	
2013/10/01 17:00:01	34.5	35.0	0.5	27.3	
2013/10/01 18:00:01	28.5	29.5	1.0	25.7	

In winter Energy saving for elementary school in Canada

It applied at elementary school in Vancouver, As a result of comparing air conditioning costs between 2009 and 2011, we have demonstrated the effect of reducing the air conditioning cost by 16% on average. As the air conditioning cost reduction of 5,472 Canadian dollars is annualized, it is calculated that application costs can be amortized and collected within 2years.

	2011 Gas Consumption	2011 HDD Monthly Total	2011 GJ/HDM	2010 Gas Consumption	2010 HDD Monthly Total	2010 GJ/HDM	2009 Gas Consumption	2009 HDD Monthly Total	2009 GJ/HDM
Jan.	459 GJ	427.5 HDM	1.074	358 GJ	334.2 HDM	1.071	549 GJ	491.5 HDM	1.117
Feb.	408 GJ	407.5 HDM	0.996	370 GJ	304.3 HDM	1.216	414 GJ	391.3 HDM	1.058
Mar.	292 GJ	345.1 HDM	0.846	399 GJ	317.8 HDM	1.256	436 GJ	406 HDM	1.074
Apr.	288 GJ	320.2 HDM	0.899	253 GJ	253.2 HDM	0.999	233 GJ	266.4 HDM	0.875
May	201 GJ	211 HDM	0.953	150 GJ	185.3 HDM	0.809	121 GJ	166.4 HDM	0.727
June	76 GJ	82.4 HDM	0.922	86 GJ	91.6 HDM	0.939	44 GJ	28.4 HDM	1.549
July	29	HDM		51	HDM		179	HDM	
Aug.	30	HDM		21	HDM		167	HDM	
Sep.	51 GJ	56.8 HDM	0.898	54	81.4 HDM	0.663	64 GJ	73.5 HDM	0.871
Oct.	205 GJ	251.1 HDM	0.816	211	206.5 HDM	1.022	141 GJ	246.6 HDM	0.572
Nov.	382 GJ	385.6 HDM	0.991	441	386.0 HDM	1.140	602 GJ	326.1 HDM	1.846
Dec.	434 GJ	440 HDM	0.986	457	405.4 HDM	1.127	541 GJ	491.6 HDM	1.100
Total(4mo)	1072 GJ	1133.50 HDM	0.946	1163 GJ	1080.10 HDM	1.077	1348 GJ	1137.80 HDM	1.185

4) Images Secondary
Date Job completed: August, 2011
Method: IRUV cut Liquid Film
Cost of Materials: $10,800
Coated Area: 15% of glazing area
Average Gas Consumption: $38,000 /year
Heating Gas Consumption: $34,200 (90% of Total Gas Consumption)
Energy Savings: 16.00% (Saving Target was 5% on heating, 10% on cooling)
Savings per year: $5,472.00 /year
Payback (years): 1.97 years

4 mo(Sep.-Dec.) comparison
Savings 2011 vs.2010 12%
Savings 2011 vs.2009 20%
Ave. 16%

Depreciation simulation in the case of 100 ㎡ application

Air-conditioning operating time 8 hours a day from 9: 00 to 17: 00 /5 hours of peak hour 11:00 to 16:00

Application cost		100㎡	JPY/kwh	Annual electricity charge	20% reduction	Recovery	30% reduction	Recovery
IRUV Cut Coat 80	8,800 JPY/㎡	880,000 JPY	13 JPY	683,280 JPY	136,656 JPY	6.4 year	204,984 JPY	4.3 year