**建筑能效测评报告书**

居住建筑

|  |  |
| --- | --- |
| 工程名称 | 造绿赓青 |
| 工程地点 | 重庆-重庆 |
| 设计编号 |  |
| 建设单位 |  |
| 设计单位 |  |
| 设 计 人 |  |
| 审 核 人 |  |
| 审 定 人 |  |
| 设计日期 | 2022年3月11日 |



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| --- | --- |
| 采用软件 | 能耗计算BESI2020 |
| 软件版本 | 20200909(SP1) |
| 研发单位 | 北京绿建软件有限公司 |
| 正版授权码 | T13908391200  |

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# 建筑概况

|  |  |
| --- | --- |
| 工程名称 | 造绿赓青 |
| 工程地点 | 重庆-重庆 |
| 地理位置 | 北纬：29.58° | 东经：106.47° |
| 建筑面积(m2) | 地上26953 地下0 |
| 建筑层数 | 地上27 地下0 |
| 建筑高度（m） | 地上81.0 地下0.0 |
| 建筑体积(m3) | 80859.14 |
| 建筑外表面积(m2) | 27585.32 |
| 北向角度 | 100.7 |
| 结构类型 |  |
| 外墙太阳辐射吸收系数 | 0.75 |
| 屋顶太阳辐射吸收系数 | 0.75 |
| 控温期 | 全年控温 |

|  |  |  |
| --- | --- | --- |
|  | 标识建筑 | 比对建筑 |
| 体形系数S | 0.34 | 0.00 |
| 屋顶传热系数K [W/(m2·K)] | 0.77 | －－ |
| 外墙（包括非透明幕墙）传热系数K [W/(m2·K)] | 1.13 | －－ |
| 屋顶透明部分传热系数K [W/(m2·K)] | － | － |
| 屋顶透明部分遮阳系数 | － | － |
| 底面接触室外的架空或外挑楼板传热系数K [W/(m2·K)] | 1.19 | －－ |
| 楼板K [W/(m2·K)] | 2.98 | 2.98 |
| 分户墙K [W/(m2·K)] | 1.93 | 2.00 |
| 外窗（包括透明幕墙） | 朝向 | 窗墙比 | 传热系数 | 遮阳系数 | 窗墙比 | 传热系数 | 遮阳系数 |
| 南向 | 0.23 | 3.90 | 0.75 | 0.23 | 3.40 | 1.00 |
| 北向 | 0.22 | 3.90 | 0.75 | 0.22 | 3.40 | 1.00 |
| 东向 | 0.15 | 3.90 | 0.75 | 0.15 | 3.40 | 1.00 |
| 西向 | 0.11 | 3.90 | 0.75 | 0.11 | 3.40 | 1.00 |

# 测评依据

1. 《建筑能效标识技术标准》(JGJ/T 288-2012)

2. 标准1：《重庆市居住建筑节能65%设计标准》（DBJ50-071-2010）

3. 标准2：《民用建筑热工设计规范》(GB50176)

4. 标准3：《建筑外门窗气密，水密，抗风压性能分级及检测方法》（GB/T 7106-2008）

5. 标准4：《建筑幕墙》（GB/T 21086-2007）

# 围护结构

## 工程材料

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 材料名称 | 导热系数λ | 蓄热系数S | 密度ρ | 比热容Cp | 蒸汽渗透系数u | 备注 |
| W/(m.K) | W/(㎡.K) | kg/m3 | J/(kg.K) | g/(m.h.kPa) |
| 水泥砂浆 | 0.930 | 11.370 | 1800.0 | 1050.0 | 0.0210 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 石灰砂浆 | 0.810 | 10.070 | 1600.0 | 1050.0 | 0.0443 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 钢筋混凝土 | 1.740 | 17.200 | 2500.0 | 920.0 | 0.0158 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 碎石、卵石混凝土(ρ=2300) | 1.510 | 15.360 | 2300.0 | 920.0 | 0.0173 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 挤塑聚苯乙烯泡沫塑料（带表皮） | 0.030 | 0.340 | 35.0 | 1380.0 | 0.0000 | 来源：《民用建筑热工设计规范》GB50176-2016，蒸汽渗透系数没有给出 |
| 加气混凝土、泡沫混凝土(ρ=700) | 0.180 | 3.100 | 700.0 | 1050.0 | 0.0998 | 来源：《民用建筑热工设计规范》GB50176-2016 |
| 混凝土多孔砖(190六孔砖） | 0.750 | 7.490 | 1450.0 | 709.4 | 0.0000 |  |

# 标识建筑

## 房间类型

### 房间表

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 空调温度℃ | 供暖温度℃ | 新风量 | 渗透风换气次数 | 人员密度 | 照明功率密度 | 电器设备功率 |
| 起居室 | 26 | 18 | 0.5(次/h) | 0(次/h) | 32(㎡/人) | 6(W/㎡) | 5(W/㎡) |

### 作息时间表

详见附录

## 系统类型

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 系统编号 | 系统类型 | 供冷能效比 | 供热能效比 | 面积(㎡) | 包含的房间 |
| Sys | 双管制风机盘管 | － | － | 375.45 | 1009(1),1008(1),1002(1),1132(1),1122(1),1119(1),1113(1),1007(1),1020(1),1019(1),1017(1),1013(1),1012(1),1006(1),1004(1),1003(1),1001(1),2026(2),2025(2),2006(2),2005(2),2004(2),2003(2),2002(2),2001(2),2294(2),2293(2),2286(2),2285(2),2282(2),2281(2),2278(2),2277(2),2274(2),2273(2),2270(2),2269(2),2266(2),2265(2),2263(2),2261(2),2578(2),2575(2),2572(2),2560(2),2556(2),2537(2),2536(2),2527(2),2524(2),2512(2),2505(2),2503(2),2501(2),2498(2),2497(2),2494(2),2491(2),2479(2),2475(2),2462(2),2457(2),2454(2),2448(2),2445(2),2434(2),2427(2),2425(2),2423(2),2419(2),2414(2),2409(2),2406(2) |
| Sys1 | 双管制风机盘管 | － | － | 676.47 | 6001(3),14064(3),3033(3),3032(3),3031(3),3030(3),3029(3),3004(3),3003(3),3002(3),3001(3),3418(3),3413(3),3410(3),3407(3),3406(3),3403(3),3400(3),3399(3),3396(3),3395(3),3392(3),3391(3),3388(3),3387(3),3384(3),3383(3),3380(3),3379(3),3376(3),3375(3),3372(3),3371(3),3368(3),3367(3),3364(3),3363(3),3360(3),3359(3),3356(3),3355(3),3352(3),3351(3),3348(3),3347(3),3344(3),3343(3),31206(3),31203(3),31197(3),31177(3),31173(3),31167(3),31155(3),31152(3),31150(3),31148(3),31147(3),31144(3),31142(3),31137(3),31133(3),31121(3),31120(3),31113(3),31111(3),31108(3),31105(3),31100(3),31095(3),31084(3),31083(3),31080(3),31078(3),31074(3),31070(3),31067(3),31066(3),31064(3),31056(3),31055(3),31047(3),31043(3),31028(3),31027(3),31026(3),31022(3),31019(3),31013(3),31008(3),3997(3),3996(3),3995(3),3991(3),3989(3),3987(3),3986(3),3982(3),3979(3),3972(3),3968(3),3956(3),3955(3),3952(3),3943(3),3941(3),3937(3),3934(3),3925(3),3914(3),3911(3),3909(3),3907(3),3906(3),3903(3),3901(3),3895(3),3891(3),3879(3),3878(3),3875(3),3869(3),3867(3),3863(3),3860(3),3851(3),3840(3),3837(3),3835(3),3831(3),3827(3),3824(3),3819(3) |
| Sys10 | 双管制风机盘管 | － | － | 65.02 | 271701(27),271697(27),271680(27),271679(27),271678(27),271489(27),271480(27),271454(27),271453(27),271452(27) |
| Sys2 | 双管制风机盘管 | － | － | 1631.94 | 4001(4~5),14064(4~5),4039(4~5),4038(4~5),4037(4~5),4036(4~5),4035(4~5),4034(4~5),4004(4~5),4003(4~5),4002(4~5),4001(4~5),4513(4~5),4510(4~5),4508(4~5),4505(4~5),4504(4~5),4501(4~5),4498(4~5),4497(4~5),4494(4~5),4493(4~5),4490(4~5),4489(4~5),4486(4~5),4485(4~5),4482(4~5),4481(4~5),4478(4~5),4477(4~5),4475(4~5),4473(4~5),4470(4~5),4469(4~5),4466(4~5),4465(4~5),4462(4~5),4461(4~5),4458(4~5),4457(4~5),4454(4~5),4453(4~5),4450(4~5),4449(4~5),4446(4~5),4445(4~5),4442(4~5),4441(4~5),4438(4~5),4437(4~5),4434(4~5),4433(4~5),4430(4~5),4429(4~5),4427(4~5),4425(4~5),41698(4~5),41694(4~5),41686(4~5),41674(4~5),41669(4~5),41661(4~5),41652(4~5),41650(4~5),41648(4~5),41645(4~5),41644(4~5),41642(4~5),41640(4~5),41630(4~5),41626(4~5),41615(4~5),41614(4~5),41611(4~5),41608(4~5),41603(4~5),41600(4~5),41593(4~5),41588(4~5),41581(4~5),41580(4~5),41578(4~5),41576(4~5),41573(4~5),41572(4~5),41570(4~5),41568(4~5),41557(4~5),41553(4~5),41542(4~5),41541(4~5),41538(4~5),41536(4~5),41533(4~5),41527(4~5),41524(4~5),41517(4~5),41512(4~5),41505(4~5),41504(4~5),41502(4~5),41500(4~5),41496(4~5),41491(4~5),41486(4~5),41485(4~5),41481(4~5),41477(4~5),41476(4~5),41464(4~5),41460(4~5),41448(4~5),41447(4~5),41446(4~5),41441(4~5),41438(4~5),41431(4~5),41426(4~5),41418(4~5),41417(4~5),41416(4~5),41414(4~5),41413(4~5),41410(4~5),41409(4~5),41407(4~5),41405(4~5),41394(4~5),41390(4~5),41379(4~5),41378(4~5),41375(4~5),41373(4~5),41370(4~5),41364(4~5),41361(4~5),41350(4~5),41343(4~5),41341(4~5),41340(4~5),41337(4~5),41336(4~5),41334(4~5),41332(4~5),41321(4~5),41317(4~5),41306(4~5),41305(4~5),41302(4~5),41300(4~5),41297(4~5),41291(4~5),41288(4~5),41277(4~5),41270(4~5),41268(4~5),41267(4~5),41263(4~5),41258(4~5),41253(4~5),41250(4~5) |
| Sys3 | 双管制风机盘管 | － | － | 13318.58 | 6001(6~13,17~23),14064(6~13,17~23),6023(6~13,17~23),6020(6~13,17~23),6019(6~13,17~23),6017(6~13,17~23),6014(6~13,17~23),6005(6~13,17~23),6256(6~13,17~23),6255(6~13,17~23),6252(6~13,17~23),6250(6~13,17~23),6243(6~13,17~23),6242(6~13,17~23),6232(6~13,17~23),6231(6~13,17~23),6222(6~13,17~23),6220(6~13,17~23),6216(6~13,17~23),6213(6~13,17~23),6208(6~13,17~23),6207(6~13,17~23),6200(6~13,17~23),6199(6~13,17~23),6194(6~13,17~23),6193(6~13,17~23),6192(6~13,17~23),6191(6~13,17~23),6190(6~13,17~23),6189(6~13,17~23),6188(6~13,17~23),6186(6~13,17~23),6181(6~13,17~23),6180(6~13,17~23),6176(6~13,17~23),6175(6~13,17~23),6169(6~13,17~23),6168(6~13,17~23),6156(6~13,17~23),6154(6~13,17~23),6151(6~13,17~23),6150(6~13,17~23),6145(6~13,17~23),6141(6~13,17~23),6136(6~13,17~23),6133(6~13,17~23),6131(6~13,17~23),6129(6~13,17~23),6124(6~13,17~23),6123(6~13,17~23),6121(6~13,17~23),6120(6~13,17~23),6118(6~13,17~23),6116(6~13,17~23),6112(6~13,17~23),6111(6~13,17~23),6070(6~13,17~23),6069(6~13,17~23),6010(6~13,17~23),6096(6~13,17~23),6082(6~13,17~23),6069(6~13,17~23),6054(6~13,17~23),6039(6~13,17~23),6021(6~13,17~23),6012(6~13,17~23),6001(6~13,17~23),6402(6~13,17~23),6401(6~13,17~23),6398(6~13,17~23),6397(6~13,17~23),6390(6~13,17~23),6386(6~13,17~23),6377(6~13,17~23),6376(6~13,17~23),6375(6~13,17~23),6370(6~13,17~23),6367(6~13,17~23),6360(6~13,17~23),6355(6~13,17~23),6347(6~13,17~23),6346(6~13,17~23),6345(6~13,17~23),6341(6~13,17~23),6338(6~13,17~23),6337(6~13,17~23),6335(6~13,17~23),6333(6~13,17~23),6322(6~13,17~23),6318(6~13,17~23),6307(6~13,17~23),6306(6~13,17~23),6303(6~13,17~23),6301(6~13,17~23),6298(6~13,17~23),6292(6~13,17~23),6289(6~13,17~23),6282(6~13,17~23),6277(6~13,17~23),6270(6~13,17~23),6269(6~13,17~23),6265(6~13,17~23),6263(6~13,17~23),6262(6~13,17~23),6260(6~13,17~23),6258(6~13,17~23),6253(6~13,17~23),6249(6~13,17~23),6241(6~13,17~23),6240(6~13,17~23),6237(6~13,17~23),6233(6~13,17~23),6230(6~13,17~23),6228(6~13,17~23),6225(6~13,17~23),6223(6~13,17~23),6218(6~13,17~23),6215(6~13,17~23),6214(6~13,17~23),6212(6~13,17~23),6210(6~13,17~23),6206(6~13,17~23),6204(6~13,17~23),6203(6~13,17~23),6201(6~13,17~23),6198(6~13,17~23),6197(6~13,17~23),6187(6~13,17~23),6183(6~13,17~23),6174(6~13,17~23),6173(6~13,17~23),6172(6~13,17~23),6167(6~13,17~23),6164(6~13,17~23),6157(6~13,17~23),6152(6~13,17~23),6144(6~13,17~23),6143(6~13,17~23),6142(6~13,17~23),6138(6~13,17~23),6135(6~13,17~23),6134(6~13,17~23),6132(6~13,17~23),6130(6~13,17~23),6119(6~13,17~23),6115(6~13,17~23),6104(6~13,17~23),6103(6~13,17~23),6100(6~13,17~23),6098(6~13,17~23),6095(6~13,17~23),6089(6~13,17~23),6086(6~13,17~23),6075(6~13,17~23),6068(6~13,17~23),6064(6~13,17~23),6062(6~13,17~23),6061(6~13,17~23),6059(6~13,17~23),6057(6~13,17~23),6051(6~13,17~23),6047(6~13,17~23),6038(6~13,17~23),6037(6~13,17~23),6034(6~13,17~23),6030(6~13,17~23),6027(6~13,17~23),6025(6~13,17~23),6022(6~13,17~23),6016(6~13,17~23),6013(6~13,17~23),6011(6~13,17~23),6007(6~13,17~23),6004(6~13,17~23),6003(6~13,17~23) |
| Sys4 | 双管制风机盘管 | － | － | 767.35 | 14147(14),14116(14),14053(14),14033(14),14003(14),14002(14),14001(14),14146(14),14145(14),14144(14),14143(14),14141(14),14140(14),14139(14),14138(14),14137(14),14136(14),14135(14),14134(14),14133(14),14132(14),14131(14),14130(14),14129(14),14128(14),14127(14),14126(14),14125(14),14124(14),14123(14),14122(14),14121(14),14120(14),14119(14),14118(14),14117(14),14114(14),14113(14),14112(14),14111(14),14110(14),14109(14),14108(14),14107(14),14106(14),14105(14),14103(14),14102(14),14101(14),14100(14),14099(14),14098(14),14097(14),14096(14),14095(14),14094(14),14093(14),14092(14),14091(14),14090(14),14089(14),14087(14),14086(14),14085(14),14084(14),14083(14),14082(14),14081(14),14080(14),14078(14),14077(14),14076(14),14075(14),14074(14),14073(14),14072(14),14070(14),14069(14),14068(14),14065(14),14064(14),14063(14),14056(14),14055(14),14052(14),14051(14),14050(14),14048(14),14047(14),14045(14),14044(14),14043(14),14042(14),14041(14),14040(14),14039(14),14038(14),14037(14),14036(14),14035(14),14031(14),14029(14),14027(14),14026(14),14025(14),14024(14),14023(14),14022(14),14020(14),14019(14),14018(14),14017(14),14016(14),14015(14),14014(14),14013(14),14012(14),14011(14),14010(14),14008(14),14006(14),14005(14),14004(14),14003(14),14002(14) |
| Sys5 | 双管制风机盘管 | － | － | 56.83 | 15181(15),15167(15),15153(15) |
| Sys6 | 双管制风机盘管 | － | － | 744.17 | 16148(16),16121(16),16120(16),16118(16),16117(16),16002(16),16365(16),16364(16),16363(16),16361(16),16360(16),16359(16),16358(16),16357(16),16356(16),16355(16),16354(16),16353(16),16352(16),16351(16),16350(16),16349(16),16348(16),16347(16),16346(16),16345(16),16344(16),16343(16),16342(16),16341(16),16340(16),16339(16),16338(16),16336(16),16335(16),16334(16),16333(16),16332(16),16331(16),16330(16),16329(16),16328(16),16327(16),16325(16),16324(16),16323(16),16322(16),16321(16),16320(16),16319(16),16318(16),16317(16),16316(16),16315(16),16314(16),16313(16),16312(16),16311(16),16310(16),16309(16),16308(16),16307(16),16306(16),16305(16),16304(16),16303(16),16302(16),16301(16),16300(16),16299(16),16298(16),16297(16),16296(16),16295(16),16294(16),16293(16),16292(16),16291(16),16290(16),16288(16),16287(16),16285(16),16282(16),16279(16),16278(16),16277(16),16276(16),16275(16),16272(16),16271(16),16270(16),16269(16),16268(16),16266(16),16265(16),16264(16),16262(16),16261(16),16260(16),16259(16),16258(16),16257(16),16256(16),16255(16),16254(16),16253(16),16252(16),16251(16),16250(16),16249(16),16248(16),16247(16),16246(16),16245(16),16244(16),16243(16),16242(16),16241(16),16240(16),16239(16),16238(16),16237(16),16236(16),16235(16),16234(16),16233(16),16232(16),16231(16),16230(16),16229(16),16228(16),16227(16),16226(16),16225(16),16224(16),16223(16),16222(16),16221(16),16219(16),16218(16),16217(16),16216(16),16215(16),16214(16),16213(16) |
| Sys7 | 双管制风机盘管 | － | － | 613.60 | 24024(24),24021(24),24018(24),24015(24),24260(24),24258(24),24254(24),24253(24),24247(24),24246(24),24237(24),24233(24),24225(24),24223(24),24218(24),24217(24),24210(24),24209(24),24196(24),24195(24),24404(24),24403(24),24400(24),24399(24),24396(24),24392(24),24380(24),24379(24),24378(24),24374(24),24371(24),24366(24),24361(24),24350(24),24349(24),24348(24),24344(24),24342(24),24340(24),24339(24),24336(24),24334(24),24328(24),24324(24),24312(24),24311(24),24308(24),24302(24),24300(24),24296(24),24293(24),24288(24),24283(24),24272(24),24271(24),24268(24),24266(24),24261(24),24259(24),24242(24),24236(24),24232(24),24260(24),24258(24),24254(24),24253(24),24247(24),24246(24),24237(24),24233(24),24225(24),24223(24),24218(24),24217(24),24210(24),24209(24),24196(24),24195(24),24404(24),24403(24),24400(24),24399(24),24396(24),24392(24),24380(24),24379(24),24378(24),24374(24),24371(24),24366(24),24361(24),24350(24),24349(24),24348(24),24344(24),24342(24),24340(24),24339(24),24336(24),24334(24),24328(24),24324(24),24312(24),24311(24),24308(24),24302(24),24300(24),24296(24),24293(24),24288(24),24283(24),24272(24),24271(24),24268(24),24266(24),24261(24),24259(24),24242(24),24236(24),24232(24) |
| Sys8 | 双管制风机盘管 | － | － | 449.94 | 25028(25),25027(25),25696(25),25694(25),25676(25),25675(25),25674(25),25340(25),25339(25),25336(25),25335(25),25332(25),25331(25),25326(25),25325(25),25308(25),25307(25),25304(25),25303(25),25300(25),25299(25),25292(25),25291(25),25815(25),25814(25),25811(25),25810(25),25807(25),25803(25),25791(25),25790(25),25789(25),25785(25),25782(25),25777(25),25772(25),25761(25),25760(25),25759(25),25755(25),25753(25),25751(25),25748(25),25746(25),25732(25),25729(25),25723(25),25722(25),25721(25),25719(25),25696(25),25694(25),25676(25),25675(25),25674(25),25649(25),25648(25),25643(25),25642(25),25637(25),25633(25),25621(25),25620(25),25619(25),25615(25),25612(25),25607(25),25602(25),25591(25),25590(25),25589(25),25585(25),25583(25),25581(25),25577(25),25574(25),25550(25),25547(25),25541(25),25540(25),25539(25),25535(25) |
| Sys9 | 双管制风机盘管 | － | － | 130.04 | 261248(26),261245(26),261233(26),261232(26),261231(26),261207(26),261204(26),261180(26),261179(26),261178(26),261068(26),261057(26),261031(26),261030(26),261029(26),26983(26),26980(26),26946(26),26945(26),26944(26) |

## 制冷系统

### 冷水机组

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 名称 | 类型 | 额定耗电量(kW) | 额定制冷量(kW) | 额定性能系数(COP) | 台数 |
| 冷水机组 | 水冷-螺杆式冷水机组 | 100 | 500 | 5.00 | 1 |

### 水泵系统

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 类型 | 流量(m3/h) | 扬程(m) | 设计工作效率(%) | 输入功率(kW) | 台数 |
| 冷却水泵 | 320 | 25 | 80 | 31.3 | 1 |
| 冷冻水泵 | 320 | 30 | 80 | 37.6 | 1 |

### 运行工况

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 负荷率(%) | 机组制冷量(kW) | 机组功率(kW) | 性能系数(COP) | 冷却水泵功率(kW) | 冷冻水泵功率(kW) |
| 25 | 125 | 30 | 4.17 | 31.3 | 37.6 |
| 50 | 250 | 55 | 4.55 | 31.3 | 37.6 |
| 75 | 375 | 75 | 5.00 | 31.3 | 37.6 |
| 100 | 500 | 100 | 5.00 | 31.3 | 37.6 |

### 制冷能耗

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 负荷区间(%) | 区间负荷(kWh) | 运行时长(h) | 性能系数(COP) | 制冷机组(kWh) | 冷却水泵(kWh) | 冷冻水泵(kWh) |
| 0~25 | 0 | 0 | 4.17 | 0 | 0 | 0 |
| 25~50 | 0 | 0 | 4.55 | 0 | 0 | 0 |
| 50~75 | 0 | 0 | 5.00 | 0 | 0 | 0 |
| 75~100 | 0 | 0 | 5.00 | 0 | 0 | 0 |
| >100 | 0 | 0 | － | 0 | 0 | 0 |
| 合计 | 0 | 0 |  | 0 | 0 | 0 |

## 供暖系统

### 热水锅炉系统

#### 热水锅炉

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 燃料类型 | 容量(MW) | 台数 | 锅炉热效率 | 外网热输送效率 | 累计热负荷(kWh) | 热/电系数(kWh/kWh) | 折合电耗(kWh) |
| 烟煤II | 1.00 | 1 | 0.78 | 0.92 | 0 | 2.93 | 0 |

#### 热水循环泵

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 类型 | 流量(m3/h) | 扬程(m) | 设计工作效率(%) | 输入功率(kW) | 台数 |
| 单速 | 320 | 30 | 80 | 37.6 | 1 |

#### 热水循环水泵能耗

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 负荷率(%) | 锅炉负荷(kW) | 供暖水泵功率(kW) | 热水输送能效比EHR | 区间负荷(kWh) | 区间时长(h) | 供暖水泵电耗(kWh) |
| 25 | 250 | 37.6 | 0.1504 | 0 | 0 | 0 |
| 50 | 500 | 37.6 | 0.0752 | 0 | 0 | 0 |
| 75 | 750 | 37.6 | 0.0501 | 0 | 0 | 0 |
| 100 | 1000 | 37.6 | 0.0376 | 0 | 0 | 0 |
| 综合 | 0 | 0 | 0 |

# 比对建筑

## 房间类型

### 房间表

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 空调温度℃ | 供暖温度℃ | 新风量 | 渗透风换气次数 | 人员密度 | 照明功率密度 | 电器设备功率 |
| 起居室 | 26 | 18 | 0.5(次/h) | 0(次/h) | 32(㎡/人) | 6(W/㎡) | 5(W/㎡) |

### 作息时间表

同标识建筑

## 系统类型

|  |  |  |  |
| --- | --- | --- | --- |
| 系统类型 | 供冷能效比 | 供热能效比 | 包含房间 |
| 单元式房间空调器 | 2.80 | 2.80 | 所有房间 |

## 制冷系统

|  |  |  |  |
| --- | --- | --- | --- |
| 系统类型 | 供冷能效比 | 冷负荷(kWh) | 电耗(kWh) |
| 单元式房间空调器 | 2.80 | 0 | 0 |

## 供暖系统

|  |  |  |  |
| --- | --- | --- | --- |
| 系统类型 | 供热能效比 | 热负荷(kWh) | 电耗(kWh) |
| 单元式房间空调器 | 2.80 | 0 | 0 |

# 计算结果

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 能耗分类 | 能耗子类 | 标识建筑(kWh/㎡) | 比对建筑(kWh/㎡) | 比对节能率（%） | 基础建筑(kWh/㎡) | 基础节能率（%） |
| 建筑负荷 | 耗冷量 | 0.00 | 0.00 | - |  |  |
| 耗热量 | 0.00 | 0.00 | - |  |  |
| 冷热合计 | 0.00 | 0.00 | - |  |  |
| 供冷电耗 | 中央冷源 | 0.00 | 0.00 | - |  |  |
| 冷却水泵 | 0.00 | 0.00 |
| 冷冻水泵 | 0.00 | 0.00 |
| 多联机/单元式空调 | 0.00 | 0.00 |
| 供冷合计 | 0.00 | 0.00 |
| 供暖电耗 | 中央热源 | 0.00 | 0.00 | - |  |  |
| 供暖水泵 | 0.00 | 0.00 |
| 多联机/单元式热泵 | 0.00 | 0.00 |
| 供暖合计 | 0.00 | 0.00 |
| 采暖空调电耗 | 0.00 | 0.00 | - | 0.00 | - |





# 附录

## 工作日/节假日人员逐时在室率(%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 起居室 | 16 | 16 | 16 | 15 | 16 | 24 | 31 | 19 | 15 | 14 | 14 | 19 | 22 | 19 | 13 | 14 | 18 | 35 | 49 | 54 | 50 | 35 | 21 | 15 |
| 14 | 13 | 13 | 13 | 13 | 18 | 22 | 24 | 29 | 32 | 34 | 37 | 35 | 32 | 26 | 28 | 33 | 39 | 44 | 47 | 45 | 34 | 23 | 16 |

注：上行：工作日；下行：节假日

## 工作日/节假日照明开关时间表(%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 起居室 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 50 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 50 |

注：上行：工作日；下行：节假日

## 工作日/节假日设备逐时使用率(%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 房间类型 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 起居室 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 69 | 69 | 23 | 23 | 23 | 23 | 23 | 100 | 100 | 100 | 100 | 69 |
| 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 69 | 69 | 23 | 23 | 23 | 23 | 23 | 100 | 100 | 100 | 100 | 69 |

注：上行：工作日；下行：节假日

## 工作日/节假日空调系统运行时间表(1:开,0:关)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 系统编号 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Sys | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sys9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

注：上行：工作日；下行：节假日