

BİNALARDA LEED SERTİFİKASYONU

İBRAHİM ÇAKMANUS

MAKİNA MÜHENDİSLERİ ODASI ANKARA ŞUBESİ

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Bina Sertifikasyon Sistemleri

- Sürdürülebilir (çevre dostu/yüksek performanslı/yeşil bina) binaların tasarımı, inşaatı ve işletmesi süreçleri için sertifikasyon sistemleri çok iyi bir disiplin sağlarlar.
- Sertifikasyon sistemleri binanın yer seçiminden işletme sürecine kadar bütünsel bir kalite yönetim sistemidir.
- LEED, Breem, DNGB gibi birçok sertifikasyon sistemi bulunmaktadır.
- Bunların içinde USGGB (ABD Yeşil Binalar Konseyi) tarafından oluşturulan ve sürekli geliştirilen LEED Sertifikasyon Sistemidir.
- LEED Sertifikasyon sistemi hakiki anlamda uygulandığı takdirde sürdürülebilir, enerji verimli, çevre dostu binaların yapılması, tadilatı ve işletmesinde çok iyi bir rehberdir.
- Bina alanında çalışmak isteyen genç mimar, mühendis, fizikçilerimizin bu konularda mutlaka eğitilmeleri gerektiğine inanıyorum.

Sertifikasyon Sistemleri.

LEED Sertifikasyon Sistemi

Leed Sertifikasyon Sistemi endüstriyi aşağıdaki başlıklarda dönüştürmeyi hedeflemektedir.

- Küresel iklim değişikliğini tersine çevirmek,
- İnsanların sağlığını ve konforunu iyileştirmek,
- Su kaynaklarını korumak ve verimli kullanmak,
- Ekosistemi ve biyolojik çeşitliliğin korunmasına destek vermek,
- Sürdürülebilir ve geri dönüştürülebilir malzeme teknolojilerinin geliştirilmesine katkı sağlamak,
- Çevre dostu bir ekonomi oluşturulması,
- Sosyal eşitlik, çevrenin korunması, toplum sağlığı, yaşam kalitesinin artırılması.



LEED Sertifikasyon Sistemi.

LEED Sertifikasyon Sistemi

RATING SYSTEM DESCRIPTIONS

LEED FOR BUILDING DESIGN AND CONSTRUCTION

Buildings that are new construction or major renovation. In addition, at least 60% of the project's *gross floor area* must be *complete* by the time of certification (except for LEED BD+C: Core and Shell).

- **LEED BD+C: New Construction and Major Renovation.** New construction or major renovation of buildings that do not primarily serve K-12 educational, retail, data centers, warehouses and distribution centers, hospitality, or healthcare uses. New construction also includes high-rise residential buildings 9 stories or more.
- **LEED BD+C: Core and Shell Development.** Buildings that are new construction or major renovation for the exterior shell and core mechanical, electrical, and plumbing units, but not a complete interior fit-out. LEED BD+C: Core and Shell is the appropriate rating system to use if more than 40% of the gross floor area is incomplete at the time of certification.
- **LEED BD+C: Schools.** Buildings made up of core and ancillary learning spaces on K-12 school grounds. LEED BD+C: Schools may optionally be used for higher education and non-academic buildings on school campuses.
- **LEED BD+C: Retail.** Buildings used to conduct the retail sale of consumer product goods. Includes both direct customer service areas (showroom) and preparation or storage areas that support customer service.
- **LEED BD+C: Data Centers.** Buildings specifically designed and equipped to meet the needs of high density computing equipment such as server racks, used for data storage and processing. LEED BD+C: Data Centers only addresses whole building data centers (greater than 60%).
- **LEED BD+C: Warehouses and Distribution Centers.** Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings, such as self-storage.
- **LEED BD+C: Hospitality.** Buildings dedicated to hotels, motels, inns, or other businesses within the service industry that provide transitional or short-term lodging with or without food.
- **LEED BD+C: Healthcare.** Hospitals that operate twenty-four hours a day, seven days a week and provide inpatient medical treatment, including acute and long-term care.
- **LEED BD+C: Homes and Multifamily Lowrise.** Single-family homes and multi-family residential buildings of 1 to 3 stories. Projects 3 to 5 stories may choose the Homes rating system that corresponds to the ENERGY STAR program in which they are participating.
- **LEED BD+C: Multifamily Midrise.** Multi-family residential buildings of 4 to 8 occupiable stories above grade. The building must have 50% or more residential space. Buildings near 8 stories can inquire with USGBC about using Midrise or New Construction, if appropriate.

LEED FOR INTERIOR DESIGN AND CONSTRUCTION.

Interior spaces that are a complete interior fit-out. In addition, at least 60% of the project's gross floor area must be complete by the time of certification.

- **LEED ID+C: Commercial Interiors.** Interior spaces dedicated to functions other than retail or hospitality.
- **LEED ID+C: Retail.** Interior spaces used to conduct the retail sale of consumer product goods. Includes both direct customer service areas (showroom) and preparation or storage areas that support customer service.
- **LEED ID+C: Hospitality.** Interior spaces dedicated to hotels, motels, inns, or other businesses within the service industry that provide transitional or short-term lodging with or without food.

LEED FOR BUILDING OPERATIONS AND MAINTENANCE.

Existing buildings that are undergoing *improvement* work or little to no construction.

- **LEED O+M: Existing Buildings.** Existing buildings that do not primarily serve K-12 educational, retail, data centers, warehouses and distribution centers, or hospitality uses.
- **LEED O+M: Retail.** Existing buildings used to conduct the retail sale of consumer product goods. Includes both direct customer service areas (showroom) and preparation or storage areas that support customer service.
- **LEED O+M: Schools.** Existing buildings made up of core and ancillary learning spaces on K-12 school grounds. May also be used for higher education and non-academic buildings on school campuses.
- **LEED O+M: Hospitality.** Existing buildings dedicated to hotels, motels, inns, or other businesses within the service industry that provide transitional or short-term lodging with or without food.
- **LEED O+M: Data Centers.** Existing buildings specifically designed and equipped to meet the needs of high density computing equipment such as server racks, used for data storage and processing. LEED O+M: Data Centers only addresses whole building data centers.
- **LEED O+M: Warehouses and Distribution Centers.** Existing buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).

LEED FOR NEIGHBORHOOD DEVELOPMENT

New land development projects or redevelopment projects containing residential uses, nonresidential uses, or a mix. Projects may be at any stage of the development process, from conceptual planning through construction. It is recommended that at least 50% of total building floor area be new construction or major renovation. Buildings within the project and features in the public realm are evaluated.

- **LEED ND: Plan.** Projects in conceptual planning or master planning phases, or under construction.
- **LEED ND: Built Project.** Completed development projects.






LEED Sertifikasyon Sistemi

BASIC LEED CREDIT GROUPS/LEED TEMEL KREDİ GRUPLARI		
Credit Group Name	Kredi Grubunun Adı	Puan
Project Information		0
Integrative Process	Bütünleşik Süreç	1
Location and Transportation	Konum & Ulaşım	15
Sustainable Sites	Sürdürülebilir Araziler	10
Water Efficiency	Su Verimliliği	11
Energy and Atmosphere	Enerji ve Atmosfer	33
Materials and Resources	Malzeme ve Kaynaklar	13
Indoor Environmental Quality	İç Hava Kalitesi	16
Innovation	İnovasyon	6
Regional Priority	Bölgesel Öncelik	4
Total/Toplam		109
Total/Toplam	Certified 40 to 49 points, Silver 50 to 59 points, Gold 60 to 79 points, Platinum 80 to 109	



LEED Sertifikasyon Sistemi

LEED Sertifikasyon Sistemi

LEED v4 for BD+C: NC										22.12.2020				
										Sayfa No: 1/3				
ID	Credit Name			   			Kredi İsmi	Puanlar	Cost Impact/Mali Etki					
Project Information							İşe ait projeler, spektler, cihaz listeleri vb. oluşturulacak							
IP	Project Information			Proje Bilgileri										
Integrative Process							Bütünleşik Süreç			1	Yok	Düşük	Orta	Yüksek
1	IP	Integrative Process			Bütünleşik Süreç			1						
E	E?	H?	H	Location and Transportation			Konum & Ulaşım			15	Yok	Düşük	Orta	Yüksek
1				LTc2	Sensitive Land Protection		Hassas Alanların Korunması			1	x			
				2	LTc3	High Priority Site		Yüksek Öncelikli Saha Seçimi			2	x		
				5	LTc4	Surrounding Density and Diverse Uses		Yerleşim Yoğunluğu ve Temel Servisler			5	x		
2				2	LTc5	Access to Quality Transit		Toplu Taşımaya Yakınlık			4	x		
				1	LTc6	Bicycle Facilities		Bisiklet Olanakları			1		x	
1					LTc7	Reduced Parking Footprint		Otopark Alanının Azaltılması			1		x	
1					LTc8	Green Vehicles		Yeşil Araç			1		x	
E	E?	H?	H	Sustainable Sites			Sürdürülebilir Araziler			10	Yok	Düşük	Orta	Yüksek
E	Ön şartlar			SSp1	Construction Activity Pollution Prevention		İnşaattan Kaynaklanan Kirliliğin Önlenmesi			Required				
1				SSc1	Site Assessment		Saha Değerlendirmesi			1		x		
				2	SSc2	Site Development--Protect or Restore Habitat		Saha Gelişimi - Korunan ya da Yeniden İnşa Edilen Habitat			2			x
				1	SSc3	Open Space		Açık Alanlar			1			x
				3	SSc4	Rainwater Management		Yağmur Suyu Yönetimi			3			x
2					SSc5	Heat Island Reduction		Isı Adası Etkisinin Azaltılması			2			x
1					SSc6	Light Pollution Reduction		Işık Kirliliğinin Azaltılması			1		x	

LEED Sertifikasyon Sistemi

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E	E?	H?	H	Water Efficiency	Su Verimliliği	11	Yok	Düşük	Orta	Yüksek
?				WEp1	Outdoor Water Use Reduction	Dış mekan Su Kullanımının Azaltılması	Required	x		
E				WEp2	Indoor Water Use Reduction	İç Mekan Su Kullanımının Azaltılması	Required			
E				WEp3	Building-Level Water Metering	Bina Bazında Su Ölçümü	Required			
	1	1		WEc1	Outdoor Water Use Reduction	Dış Mekan Su Kullanımının Azaltılması	2		x	
4	2			WEc2	Indoor Water Use Reduction	İç Mekan Su Kullanımının Azaltılması	6		x	
			2	WEc3	Cooling Tower Water Use	Soğutma Kulesi Su Kullanımı	2		x	
1				WEc4	Water Metering	Su Ölçümü	1		x	
				ID	Credit Name	Points				
E	E?	H?	H	Energy and Atmosphere	Enerji ve Atmosfer	33	Yok	Düşük	Orta	Yüksek
E				EAp1	Fundamental Commissioning and Verification	Temel Test ve Devreye Alma ve Doğrulama	Required	x		
E				EAp2	Minimum Energy Performance	Minimum Enerji Performansı	Required	x		
?				EAp3	Building-Level Energy Metering	Bina Enerji Ölçümü	Required		x	
E				EAp4	Fundamental Refrigerant Management	Temel Soğutucu Akışkan Yönetimi	Required	x		
	6			EAc1	Enhanced Commissioning	İleri Devreye Alma	6			x
7	6	5		EAc2	Optimize Energy Performance	Enerji Performansının Optimize Edilmesi	18		x	
		1		EAc3	Advanced Energy Metering	Gelişmiş Enerji Ölçümü	1			x
			2	EAc4	Demand Response	Talep Tepkisi	2			x
	3			EAc5	Renewable Energy Production	Yenilenebilir Enerji Üretimi	3			x
1				EAc6	Enhanced Refrigerant Management	İleri Soğutucu Akışkan Yönetimi	1			x
			2	EAc7	Green Power and Carbon Offsets	Yeşil Güç ve Karbon Dengesi	2			x
E	E?	H?	H	Materials and Resources	Malzeme ve Kaynaklar	13	Yok	Düşük	Orta	Yüksek
?				MRp1	Storage and Collection of Recyclables	Geri Dönüştürülebilir Atıkların Toplanması	Required	x		
E				MRp2	Construction and Demolition Waste Management Planning	İnşaat / Yıkım-Atık Yönetim Planı	Required			
		5		MRc1	Building Life-Cycle Impact Reduction	Bina Yaşam Döngüsü Analizi	5			x
	2			MRc2	Product Disclosure & Optimization - EPDs	Çevresel Ürün Beyanları	2			x
	2			MRc3	Product Disclosure & Optimization - Sourcing of Raw Materials	Kaynak Kullanımı	2			x
	2			MRc4	Product Disclosure & Optimization - Material Ingredients	Malzeme İçeriği	2			x
2				MRc5	Construction and Demolition Waste Management	İnşaat / Yıkım-Atık Yönetimi	2	x		

LEED Sertifikasyon Sistemi

LEED Sertifikasyon Sistemi

			5	MRc1	Building Life-Cycle Impact Reduction	Bina Yaşam Döngüsü Analizi	5					X
	2			MRc2	Product Disclosure & Optimization - EPDs	Çevresel Ürün Beyanları	2					X
	2			MRc3	Product Disclosure & Optimization - Sourcing of Raw Materials	Kaynak Kullanımı	2					X
	2			MRc4	Product Disclosure & Optimization - Material Ingredients	Malzeme İçeriği	2					X
	2			MRc5	Construction and Demolition Waste Management	İnşaat / Yıkım-Atık Yönetimi	2	X				
E	E?	H?	H	Indoor Environmental Quality		İç Hava Kalitesi	16	Yok	Düşük	Orta	Yüksek	
E	Ön şartlar			IEQp1	Minimum Indoor Air Quality Performance	Minimum İç Ortam Hava Kalitesi	Required					
E				IEQp2	Environmental Tobacco Smoke Control	Sigara Dumanı Kontrolü	Required					
	2			IEQc1	Enhanced Indoor Air Quality Strategies	Gelişmiş İç Ortam Hava Kalitesi	2		X			
		3		IEQc2	Low-Emitting Materials	Düşük Salımlı İç Mekan Malzemesi	3					X
	1			IEQc3	Construction Indoor Air Quality Management Plan	İnşaat İç Ortam Hava Kalitesi Yönetim Planı	1		X			
	2			IEQc4	Indoor Air Quality Assessment	İç Ortam Hava Kalitesi Değerlendirme	2		X			
1				IEQc5	Thermal Comfort	Temel (Isı) Konfor	1					X
2				IEQc6	Interior Lighting	İç Mekan Aydınlatması	2					X
1		3		IEQc7	Daylight	Günişiği	3		X			
		1		IEQc8	Quality Views	Nitelikli Manzara	1		X			
		1		IEQc9	Acoustic Performance	Akustik Performans	1				X	
E	E?	H?	H	Innovation		İnovasyon	6					
	2		3	IN1	Innovation	İnovasyon	5					
1				IN2	LEED Accredited Professional	LEED Uzmanı	1					
E	E?	H?	H	Regional Priority		Bölgesel Öncelik	4	Yok	Düşük	Orta	Yüksek	
1				Rp	Thermal Comfort	Temel (Isı) Konfor	1	X				
			1	Rp	Rainwater Management	Yağmur Suyu Yönetimi	1	X				
1	1			Rp	Heat Island Reduction	Isı Adası Etkisi	1	X				
		1		Rp	Reduced Parking Footprint	Otopark Alanının Azaltılması	1	X				
29	35	25	22	TOTAL			Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110					

LEED Sertifikasyon Sistemi

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ENERGY AND ATMOSPHERE PREREQUISITE

Minimum Energy Performance

This prerequisite applies to:

New Construction
Core and Shell
Schools
Retail

Data Centers
Warehouses and Distribution Centers
Hospitality
Healthcare

INTENT

To reduce the environmental and economic harms of excessive energy use by achieving a minimum level of energy efficiency for the building and its systems.

REQUIREMENTS

NEW CONSTRUCTION, CORE AND SHELL, SCHOOLS, RETAIL, HEALTHCARE, WAREHOUSES AND DISTRIBUTION CENTERS, HOSPITALITY

OPTION 1. WHOLE-BUILDING ENERGY SIMULATION

Demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1-2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), using a simulation model.

Projects must meet the minimum percentage savings before taking credit for renewable energy systems.

The proposed design must meet the following criteria:

- compliance with the mandatory provisions of ANSI/ASHRAE/IESNA Standard 90.1-2010, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.);
- inclusion of all energy consumption and costs within and associated with the building project; and
- comparison against a baseline building that complies with Standard 90.1-2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.).

Document the energy modeling input assumptions for unregulated loads. Unregulated loads should be modeled accurately to reflect the actual expected energy consumption of the building.

STEP-BY-STEP GUIDANCE

STEP 1. DETERMINE CLIMATE ZONE

Identify the project's climate zone according to ASHRAE 90.1-2010, Appendix B (see *Further Explanation, Climate Zone Determination*).

STEP 2. REVIEW AND ADDRESS ASHRAE MANDATORY REQUIREMENTS

Early in the design process, review the mandatory provisions of ANSI/ASHRAE/IESNA Standard 90.1-2010, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.). Read through Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4 to understand how the building design must respond to these requirements.

- Typically, the architect is responsible for Section 5.4, Building Envelope; the mechanical engineer and plumbing designer are responsible for Sections 6.4, HVAC, and 7.4, Service Water Heating; and the electrical engineer is responsible for Sections 8.4, Power, and 9.4, Lighting. Compliance with Section 10.4 requires coordination across multiple disciplines.
- Ensure that the project complies with the mandatory measures throughout the design, construction, and commissioning process, particularly when major design decisions are implemented.
- Confirm that compliant components are included in the final construction documents.

1. DOE/PNNL study, ANSI/ASHRAE/IESNA Standard 90.1-2010 Final Determination Quantitative Analysis, p. 29, <http://www.energy.gov/ansiashraeies-standard-90.1-2010-final-determination-quantitative-analysis>.

STEP 3. IDENTIFY ENERGY USE TARGET FOR BUILDING

Set an energy goal for the project early in the design process. Identifying an energy goal can help prioritize efficiency strategies, integrate systems, reduce first costs, and improve building performance.

- For EA Prerequisite Minimum Energy Performance, Option 3, the energy performance target must be established using ENERGY STAR's Target Finder and must be greater than a score of 90.
- For EA Credit Optimize Energy Performance, the target must be established as energy use intensity (EUI) in kBtu per square foot-year (kWh per square meter-year) of source energy use.
- Consider using ENERGY STAR's Target Finder to develop the EUI goal that will meet the credit requirements.

STEP 4. SELECT ONE OPTION

Select the appropriate option for the project (see *Further Explanation, Selecting an Option*). Review the requirements for EA Credit Optimize Energy Performance before making a selection.

LEED Sertifikasyon Sistemi

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Group name: #DEGER1

Table: Project Information
 Enter project occupancy information. This information should be consistent with occupancy numbers used in other LEED credits.

Non-default gender mix
 The default gender mix is half male and half female. If necessary, modify the Male and Female occupancy type columns for non-default gender mix if the project is specifically designed for an alternative gender ratio or the project is expected to have alternative gender usage rates for the life of the building.

Occupancy Type	Employees (FTE)	Visitors	Retail Customers	Students (K-12)	Residential	Other (specify)	Gender Ratio (%)
Total	40	670					100%
Male	20	335	0	0	0	0	50%
Female	20	335	0	0	0	0	50%

Determine the percent of males expected to use urinals (enter 100% if all male restrooms have urinals, 0% if the project contains no urinals, etc)

Percent of males expected to use restrooms with urinals: 100%

Enter the number of days the project is accessible to employees or FTE.

Annual days of operation: 312

For projects with dual flush toilets
 Enter the resulting flush rate into the design case flush rate section below.

Low flush (gpf)	0.99
Full flush (gpf)	2.94
LEED weighted average flush rate (gpf)	1.97

Table: Flush Fixtures

- Indicate the **Fixture ID** that matches the information provided in the plumbing schedule.
- Select the **Fixture Family** and **Fixture Type** installed on the project.
- Enter the **Design Flush Rate** identified by the manufacturer - for dual flush toilets, use the dual flush calculator to determine average flush rate.
- Enter **Percent of Occupants** with access to the fixture. If the fixture is installed in all restrooms, use 100%.
- If necessary, modify the **Total Uses per Day** column for non-default uses.

Fixture Information			Flush Rate		Percent of Occupants (%)	Uses per Day						Total Daily Uses		Total Daily Water Use	
Fixture ID	Fixture Family	Fixture Type	Baseline Flush Rate (gpf)	Design Flush Rate (gpf)		Employees (FTE)	Visitors	Retail Customers	Students (K-12)	Residential	Other	Default	Non-default (Optional)	Baseline (liters)	Design (liters)
LN10	Toilet (male)	Low-Flow Water Closet	6.00	2.94	50	1.0	0.1	0.00	0.0	0.0	53.5		160.50	78,645	
LN10	Toilet (female)	Low-Flow Water Closet	6.00	2.94	50	3.0	0.5	0.00	0.0	0.0	227.5		682.50	334,425	
6809	Urinal	Low-Flow Urinal	3.80	0.988	50	2.0	0.4	0.00	0.0	0.0	174.0		330.60	85,956	
						0.0	0.0	0.00	0.0	0.0	0.0		0.00	0	
						0.0	0.0	0.00	0.0	0.0	0.0		0.00	0	
Baseline case annual flush volume (liters/year)															
Design case annual flush volume (liters/year)															

Summary for Design and Construction Rating Systems

Note: All information on this tab is READ-ONLY. To edit, see the previous tab(s).

Refresh Groups

Group Name	Baseline Case (liters/year)			Design Case (liters/year)		
	Annual Flush Volume	Annual Flow Volume	Annual Consumption	Annual Flush Volume	Annual Flow Volume	Annual Consumption
Group 1	366,163,20	135,120,96	501,284,16	155,696,11	39,127,92	194,824,03

Annual baseline water consumption (liters/year)	501,284,16
Annual design water consumption (liters/year)	194,824,03
Percent water use reduction (%)	61,14%

LEED Sertifikasyon Sistemi

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Summary

Note: All information on this tab is READ-ONLY. To edit, see the previous tab(s).

Refresh Systems

Show simple view

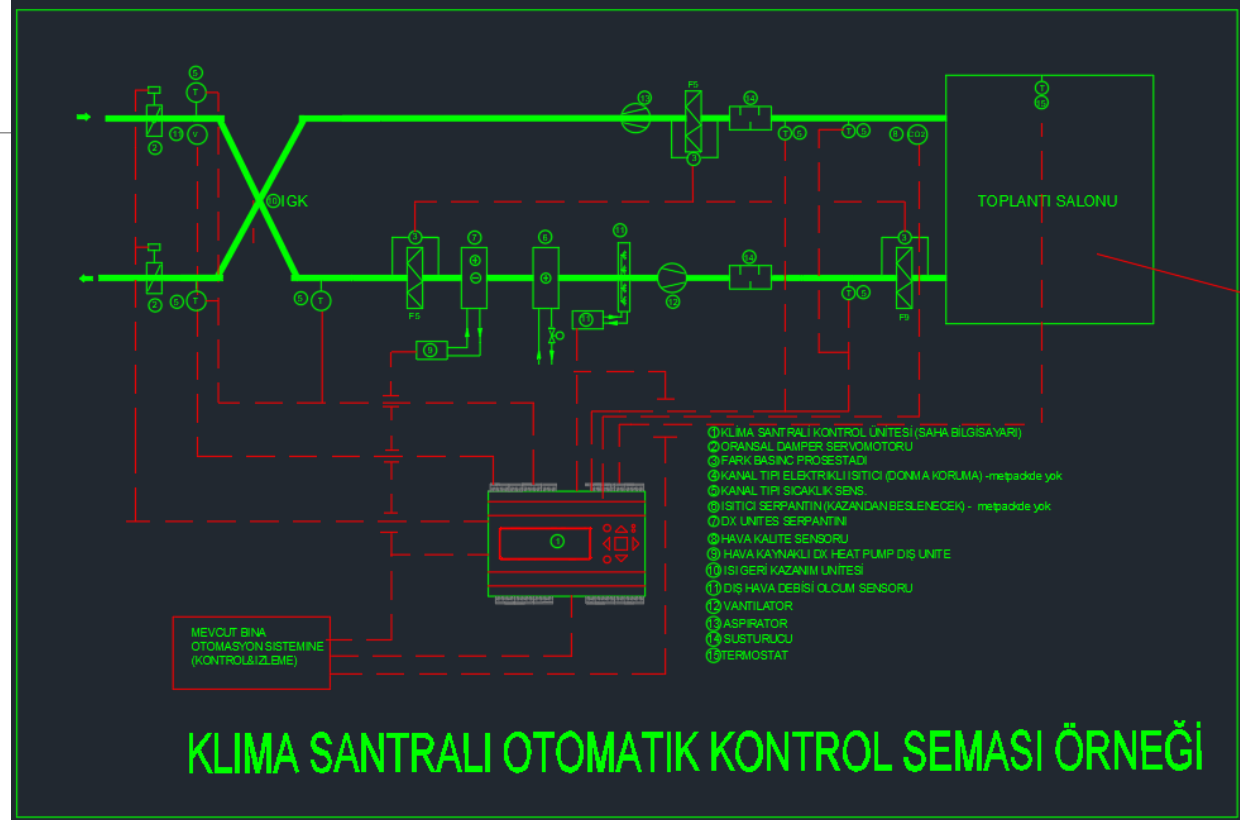
System Name and Number	System Type	All zones included in the VRP calculation?	Condition Analyzed	System Floor Area <i>As</i> (sq m)	System Population <i>Ps</i> (people)	Outdoor Air Intake Flow (30% above 62.1 requirement) <i>Vof</i> (L/s)	Outdoor Air Intake Flow Provided (measured or design) (L/s)	Outdoor air intake flow provided meets or exceeds <i>Vof</i> ?	People Outdoor Air Rate for System <i>Rp system</i> (l/s per person)	Area Outdoor Air Rate for System <i>Ra system</i> (l/s per sq m)	Occupant Diversity <i>D</i>	Average Zone Air Distribution Effectiveness <i>Ez average</i>	Ventilation Efficiency <i>Ev</i>	System Primary Airflow (at condition analyzed) <i>Vps</i> (l/s)	Average Outdoor Air Fraction <i>Xs</i>	Zone outdoor airflow provided meets or exceeds <i>Voz</i> for all zones?
Single Zone Systems																
Multiple Zone Systems																
100% Outdoor Air Systems																
IGK-ZA	100% Outdoor air	n/a	Heating	216	26,00	210	502	Yes	2,50	0,30	n/a	0,80	n/a	n/a	n/a	Yes
IGK-Z	100% Outdoor air	n/a	Heating	138	24,00	263	527	Yes	3,17	0,63	n/a	0,80	n/a	n/a	n/a	Yes
IGK-1B	100% Outdoor air	n/a	Heating	235	4,00	114	694	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
IGK-1BA	100% Outdoor air	n/a	Heating	446	26,00	331	744	Yes	2,50	0,31	n/a	0,80	n/a	n/a	n/a	Yes
IGK-2B	100% Outdoor air	n/a	Heating	423	0,00	206	800	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-9	100% Outdoor air	n/a	Heating	4.200	0,00	2.047	3.806	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-8	100% Outdoor air	n/a	Heating	3.871	0,00	1.887	4.639	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-5	100% Outdoor air	n/a	Heating	2.255	0,00	1.099	1.111	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-6	100% Outdoor air	n/a	Heating	2.300	0,00	1.121	1.167	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-7	100% Outdoor air	n/a	Heating	2.454	0,00	1.196	1.444	Yes	0,00	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-4	100% Outdoor air	n/a	Heating	339	10,00	205	5.556	Yes	2,50	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-3	100% Outdoor air	n/a	Heating	339	10,00	205	5.556	Yes	2,50	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-2	100% Outdoor air	n/a	Heating	550	10,00	308	5.556	Yes	2,50	0,30	n/a	0,80	n/a	n/a	n/a	Yes
AHU-1	100% Outdoor air	n/a	Heating	550	10,00	308	5.556	Yes	2,50	0,30	n/a	0,80	n/a	n/a	n/a	Yes
Totals				18.316	120,00	9.500	37.658							0		

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Quality Views

Space ID	Space Description	Total Regularly Occupied Area (sq m)	For Warehouses and Distribution Centers projects Office or bulk storage, sorting, and distribution for each space	Area with Direct Line of Sight to the Outdoors via Vision Glazing (sq m)	View Types	
					First View Type	Second View Type
118	TEKNİK OFİS	14,90		14,90	View Type 1	View Type 2
119	TEKNİK OFİS	14,90		14,90	View Type 1	View Type 2
120	TEKNİK OFİS	14,90		14,90	View Type 1	View Type 2
123	MUTFAK	39,70		0,00	View Type 1	View Type 2
129	VİP LOBBY	40,60		40,60	View Type 1	View Type 2
130	VİP YEMEK SALI	52,80		52,80	View Type 1	View Type 2
131	VİP YEMEK SALI	91,50		91,50	View Type 1	View Type 2
132	TOPLANTI SALI	89,80		89,80	View Type 1	View Type 2
136	MESCİT BAYAN	22,80		22,80	View Type 1	View Type 2
139	MESCİT BAY	24,20		24,20	View Type 1	View Type 2
141	ÇOKAMACLI SALI	86,00		86,00	View Type 1	View Type 2
142	ÇAY OCAĞI	8,60		0,00	View Type 1	View Type 2
144	DİNLENME SALI	207,00		207,00	View Type 1	View Type 2
109	ANT ODASI	9,60		0,00	View Type 1	View Type 2
110	ANT ODASI	9,60		0,00	View Type 1	View Type 2
111	FİTNESS LOBBY	72,20		0,00	View Type 1	View Type 2
113	FİTNESS BAYAN	228,40		228,40	View Type 1	View Type 2
114	STUDYO	44,00		44,00	View Type 1	View Type 2
151	FİTNESS BAY	136,70		136,70	View Type 1	View Type 2
Z19	VİP GİRİŞ	30,40		30,40	View Type 1	View Type 2
Z21	ALAKART RESTAURANT	661,40		661,40	View Type 1	View Type 2
Z28	SERĞİ SALONU	94,00		94,00	View Type 1	View Type 2
Z05	GÜVENLİK	5,50		0,00	View Type 1	View Type 2
Z07	TABLOT RESTAURANT	554,50		554,50	View Type 1	View Type 2
Z08	ÇOCUK OYUN	44,20		0,00	View Type 1	View Type 2
Z14	ALAKART MUTFAK	90,00		0,00	View Type 1	View Type 2
Z12A	BULASIK HANE	14,40		0,00	View Type 1	View Type 2
Z12	TABLOT MUTFAK	80,20		0,00	View Type 1	View Type 2
Total regularly occupied area (sq m)				2.782,80		
Total regularly occupied area with access to views (sq m)				2.408,80		
For Warehouses and Distribution Centers projects	Total regularly occupied area in office portions of the building (sq m)			0,00		
	Total regularly occupied area in office portions of the building with access to views (sq m)			0,00		
	Total regularly occupied area in bulk storage, sorting, and distribution portions of the building (sq m)			0,00		
	Total regularly occupied area in bulk storage, sorting, and distribution portions of the building with access to views (sq m)			0,00		



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