



**OLTRE
LA
DIRETTIVA
“CASE GREEN”
TOUR2024**



Il Nuovo Polo Scientifico di Grugliasco

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CONCRETA SOSTENIBILITÀ

STEFANO PALLAVICINI



I numeri del progetto



Il progetto in cifre

- **locazione finanziaria e gestione immobiliare** per 20 anni
- 250 milioni **valore intervento**
- 160 milioni **costo opere**
- 300 **operai giorno** medi impiegati nella realizzazione
- 38 mila **ore uomo** di progettazione

I numeri del progetto



Le aree esterne e il contesto

- 40.000 m² destinati a parco urbano
- piste ciclabili e percorsi pedonali
- 7.500 m² destinati a luoghi di incontro
- 11.000 utenti

I numeri del progetto



Le superfici edificate

85.000 m² - superficie nuovo campus
Grugliasco, tra cui:

- 22.000 m² - destinati ad aule didattiche e studio
- 47.500 m² - destinati a laboratori di ricerca
- 7.200 m² - destinati allo sport indoor

Le superfici edificate



Edificio Didattica, Ricerca e Dipartimenti

- Ricerca: **408 laboratori** (da 5 a 2 posti)
- Didattica: **1705 postazioni** in 47 laboratori (da 50 a 10 posti)
- 235 uffici e studi per docenti, ricercatori e tecnici
- 55 sale seminariali, lunch room e riunioni

Le superfici edificate



Edificio Amministrazione, Didattica e Auditorium

- Auditorium
- Aule didattiche e studio
- Uffici amministrativi e servizi agli studenti
- Ristorazione

Le funzioni del progetto



Didattica

2990 posti in 32 aule con capienze variabili da 250 a 30 posti

1200 metri 2 uffici amministrativi

10 aule studio per 250 studenti

450 metri 2 per servizi agli studenti

Le funzioni del progetto



Auditorium

- Funzionamento contemporaneo o indipendente
- 450 posti in 2 sale con capienza da 250 e 200 posti
- 160 metri 2 foyer per esposizioni temporanee
- sala regia e sala traduzioni

Le aree dedicate allo sport



Impianti sportivi indoor

- campi polivalenti (volley/basket)
- Tribuna (pubblico spettacolo) 250 posti e ristorazione
- una palestra, 3 sale (fitness, pesistica e benessere)
- spogliatoi, sala riunioni, salette mediche

Le aree dedicate allo sport



Impianti sportivi outdoor

- una pista di atletica coperta (100 metri, salto alto e lungo)
- 2 campi da calcio a 5
- 3 campi di beach volley
- locali spogliatoi per attività outdoor

Vincoli distributivi



- Il sito
- Stazione ferroviaria
- Collegamento alla città
- Impianto di captazione

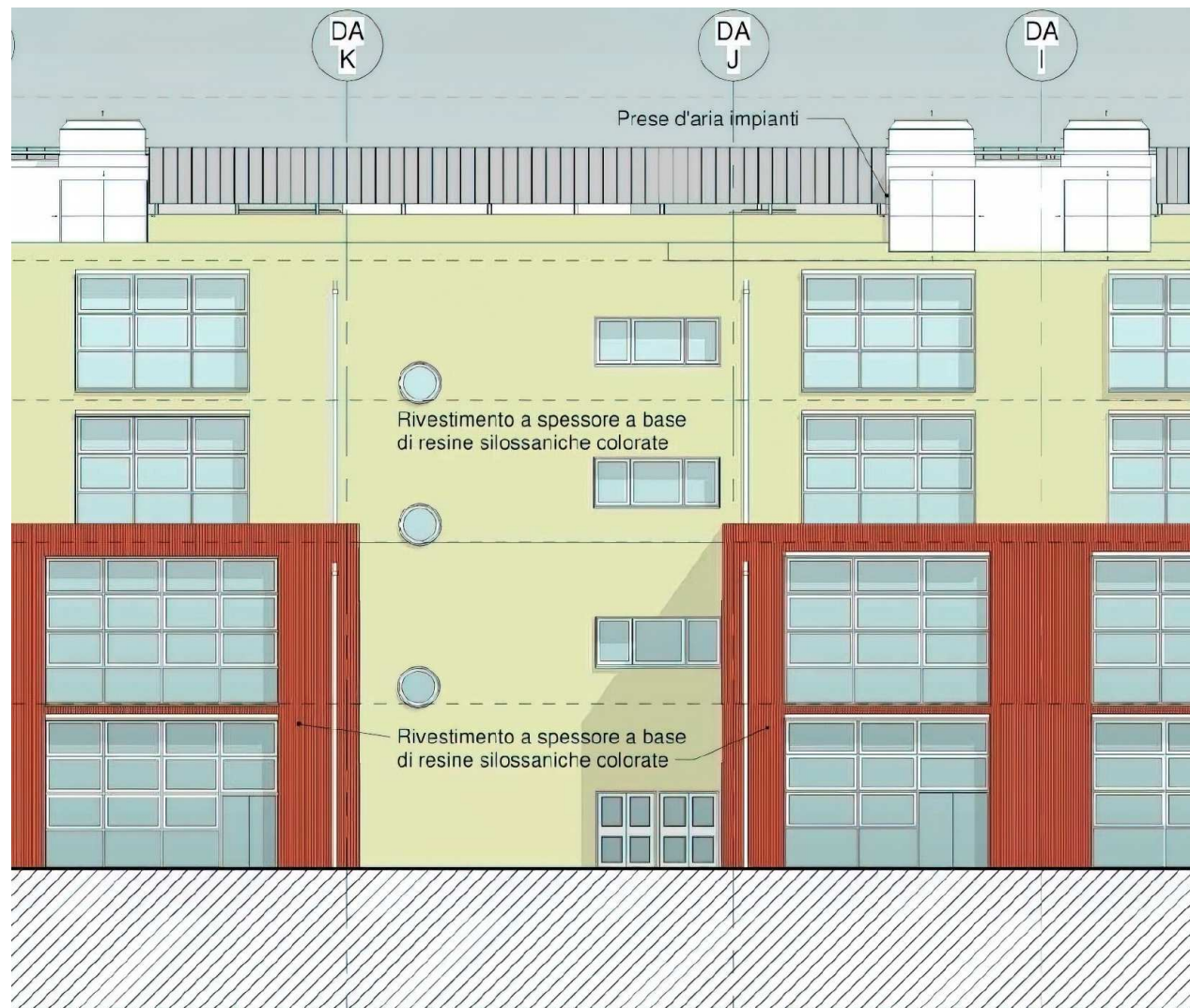
Principali aspetti costruttivi



- Strutture portanti in calcestruzzo armato/ in acciaio
- Fondazioni dirette in CA
- Chiusure perimetrali blocchi laterizi e cappotto intonacate
- Zona tecniche schermi e carter metallici, barriere fonoassorbenti
- Divisori in lastre di gesso rivestito e blocchi (REI)
- Pavimentazioni interne resilienti
- Pavimentazioni esterne gres/ blocchetti cls
- Controsoffittature quadrotti (differenziate)
- Serramenti in alluminio e vetrate isolanti

Principali aspetti costruttivi - Strutture in CA

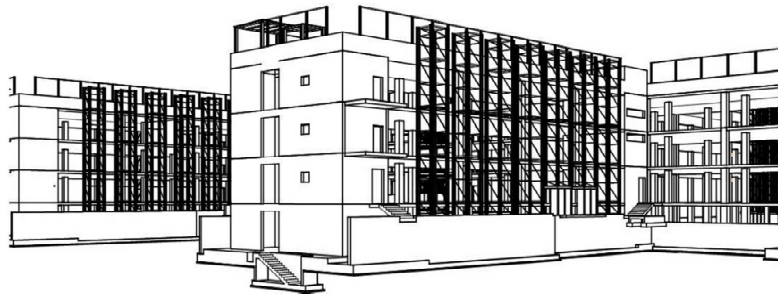
- Maglia strutturale
- Carichi di servizio
- Elementi sismoresistenti
- Sistema fondazionale
- **Comportamento e Resistenza al fuoco**
- Comportamento acustico
- Massa termica



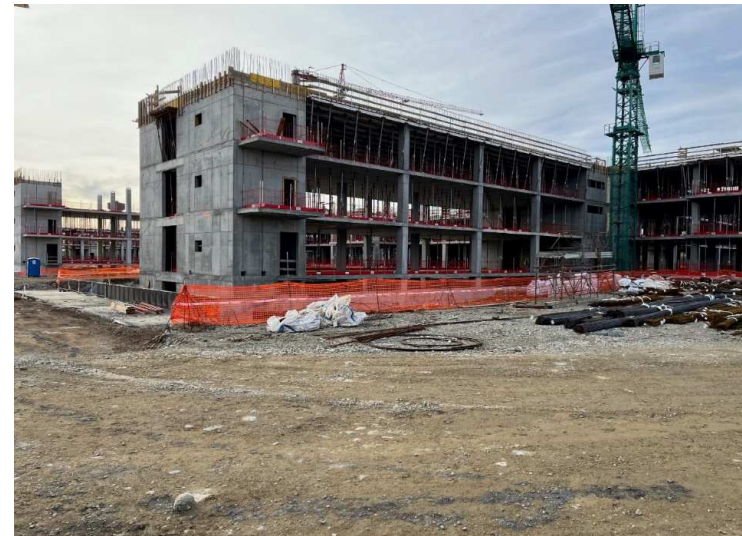
Principali aspetti costruttivi - Strutture in CA

Unità Didattica e Ricerca

Modellazione



Esecuzione



Principali aspetti costruttivi - Strutture in acciaio

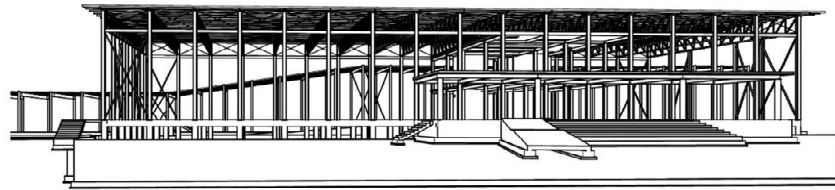
- Maglia strutturale
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- Massa termica



Principali aspetti costruttivi - Strutture in acciaio

Impianti sportivi

Modellazione



Esecuzione





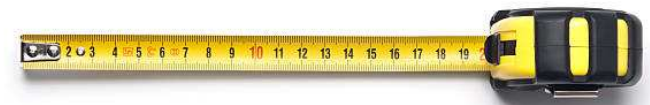
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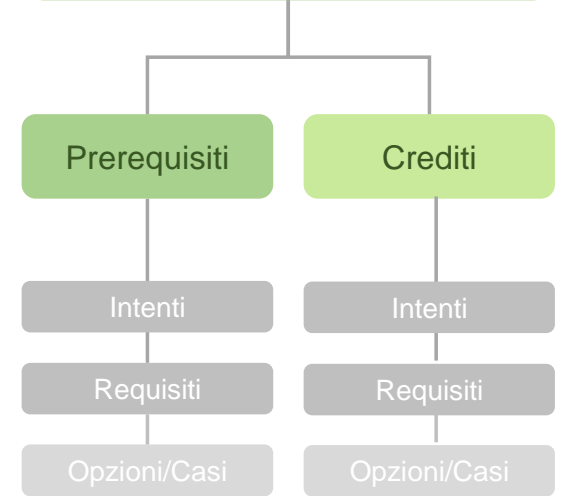
Il sistema LEED



Certificazione LEED



Categorie di sostenibilità



40-19



50-59

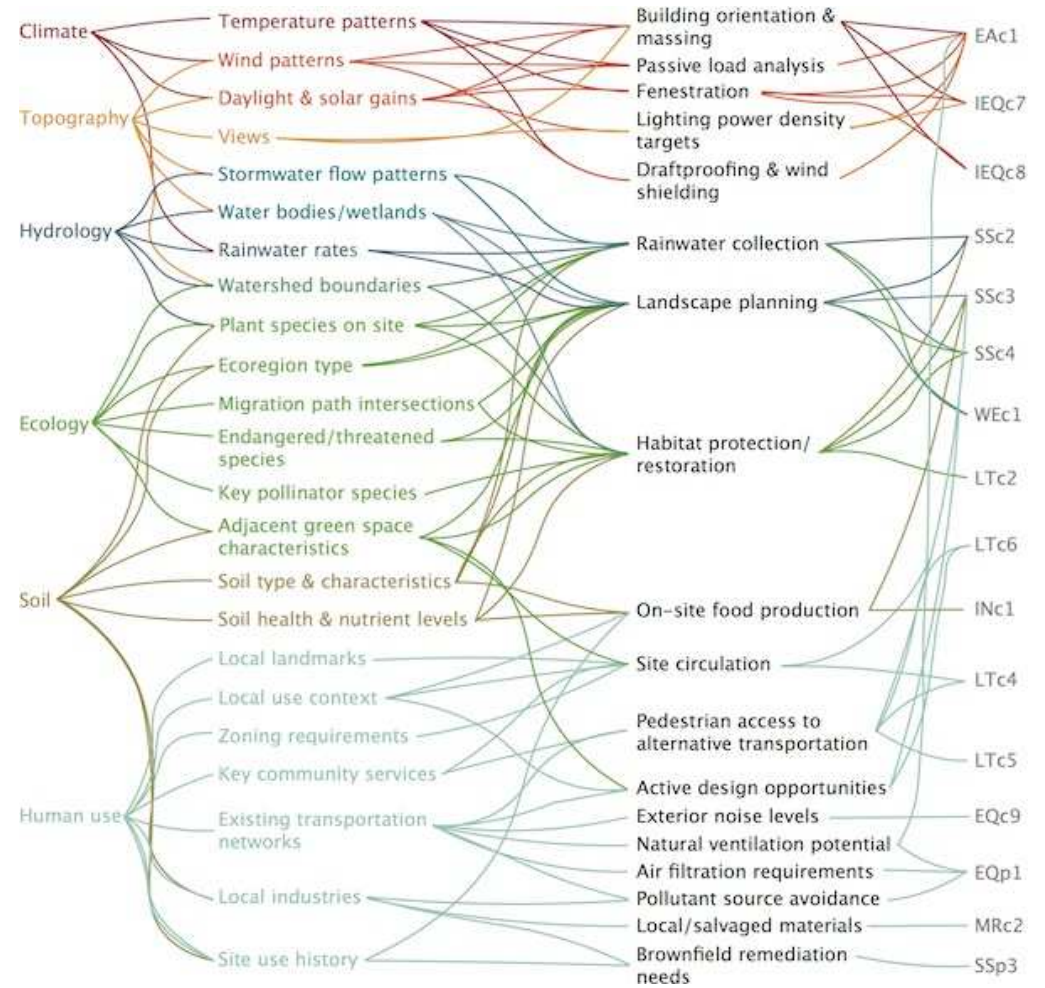
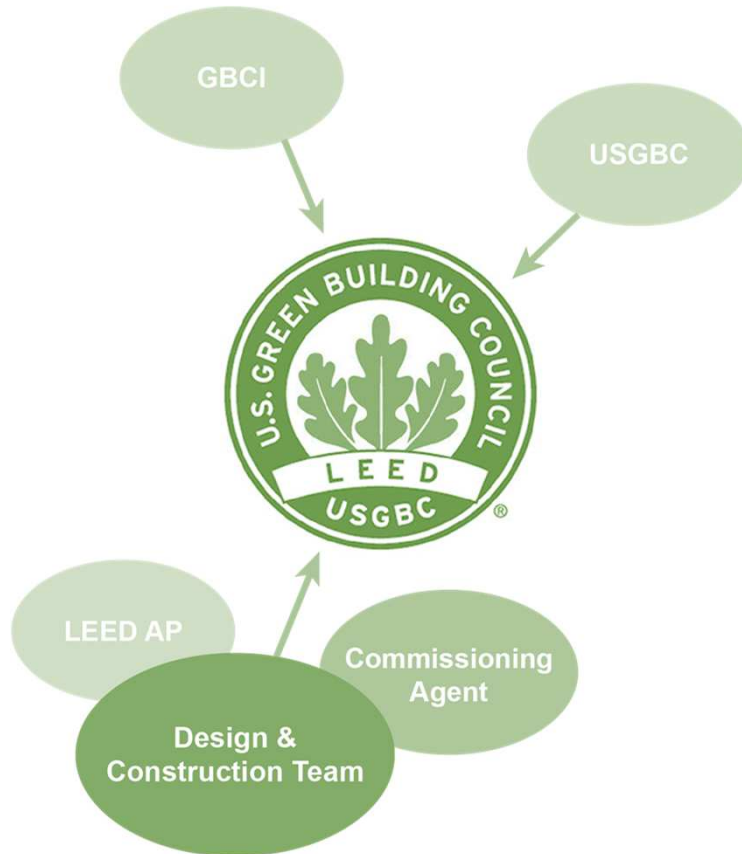


60-79



+80

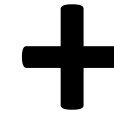
Certificazione LEED



I criteri LEED



Campus Città della Scienza e dell'Ambiente



DR - Didattica e Ricerca



DA - Didattica e Amministrazione



LR - Palestre

I criteri LEED e le fasi di applicazione



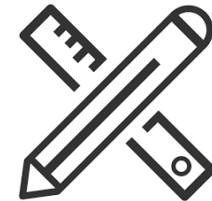
LEED v4 for BD+C: New Construction and Major Renovation
Project Checklist

Y	?	N			
			Credit	Integrative Process	1
0 0 0 Location and Transportation (LT) 16					
			Credit	LEED for Neighborhood Development Location	16
			Credit	Sensitive Land Protection	1
			Credit	High Priority Site	2
			Credit	Surrounding Density and Diverse Uses	5
			Credit	Access to Quality Transit	5
			Credit	Bicycle Facilities	1
			Credit	Reduced Parking Footprint	1
			Credit	Green Vehicles	1
0 0 0 Sustainable Sites 10					
Y			Prereq	Construction Activity Pollution Prevention	Required
			Credit	Site Assessment	1
			Credit	Site Development - Protect or Restore Habitat	2
			Credit	Open Space	1
			Credit	Rainwater Management	3
			Credit	Heat Island Reduction	2
			Credit	Light Pollution Reduction	1
0 0 0 Water Efficiency 11					
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
			Credit	Outdoor Water Use Reduction	2
			Credit	Indoor Water Use Reduction	6
			Credit	Cooling Tower Water Use	2
			Credit	Water Metering	1
0 0 0 Energy and Atmosphere 33					
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
			Credit	Enhanced Commissioning	6
			Credit	Optimize Energy Performance	18
			Credit	Advanced Energy Metering	1
			Credit	Demand Response	2
			Credit	Renewable Energy Production	3
			Credit	Enhanced Refrigerant Management	1
			Credit	Green Power and Carbon Offsets	2

Y	?	N			
			Credit	Integrative Process	1
0 0 0 Materials and Resources 13					
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - EPD	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2
0 0 0 Indoor Environmental Quality 16					
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1
0 0 0 Innovation 10					
			Credit	Innovation	5
			Credit	Innovation	1
			Credit	Innovation	1
			Credit	Innovation	1
			Credit	Innovation	1
			Credit	LEED Accredited Professional	1
0 0 0 Regional Priority 4					
			Credit	Regional Priority: Open Space	1
			Credit	Regional Priority: Green Vehicles	1
			Credit	Regional Priority: Rainwater Management	1
			Credit	Regional Priority: Light Pollution Reduction	1
TOTALS					Possible Points: 110
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 100					



CAMPUS CREDIT



BUILDING CREDIT



CONSTRUCTION CREDIT

I criteri LEED – Campus Credit



Location & Transportation:

- Bicycle Facilities
- Reduced Parking Footprint
- Green Vehicles



Sustainable Sites:

- Site Assessment
- Open Space
- Rainwater Management
- Heat Island Reduction
- Light Pollution Reduction



Water Efficiency:

- Outdoor Water Use reduction



Energy and Atmosphere:

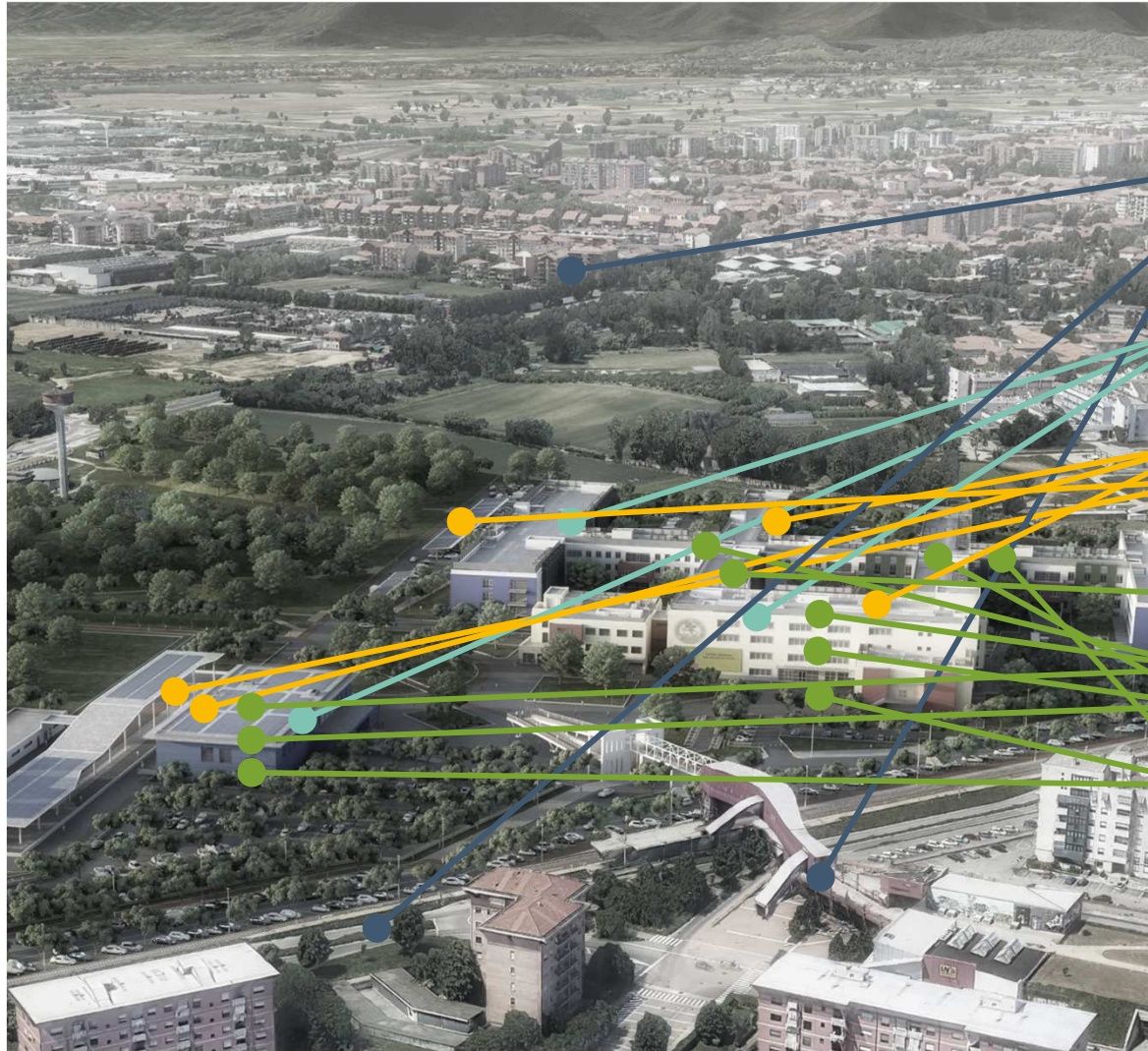
- Refrigerant Management



Material & Resources:

- Storage & Collection of Recyclables
- Construction Waste Management Planning

I criteri LEED – Building Credit



Location & Transportation:

- Surrounding Density and Diverse Uses
- Access to Quality Transit



Water Efficiency:

- Water Metering



Energy and Atmosphere:

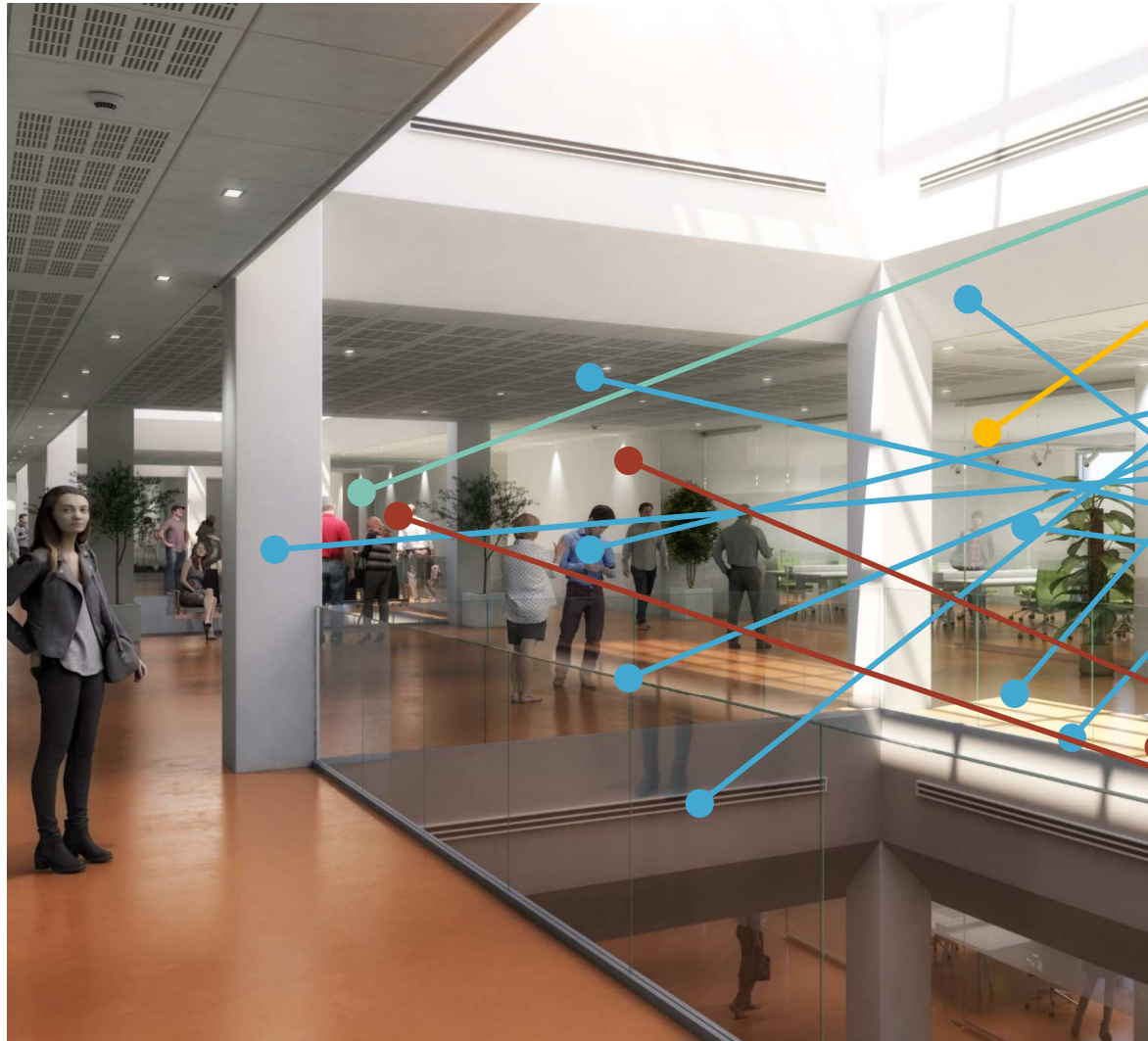
- Energy Metering
- Renewable Energy Production



Material & Resources:

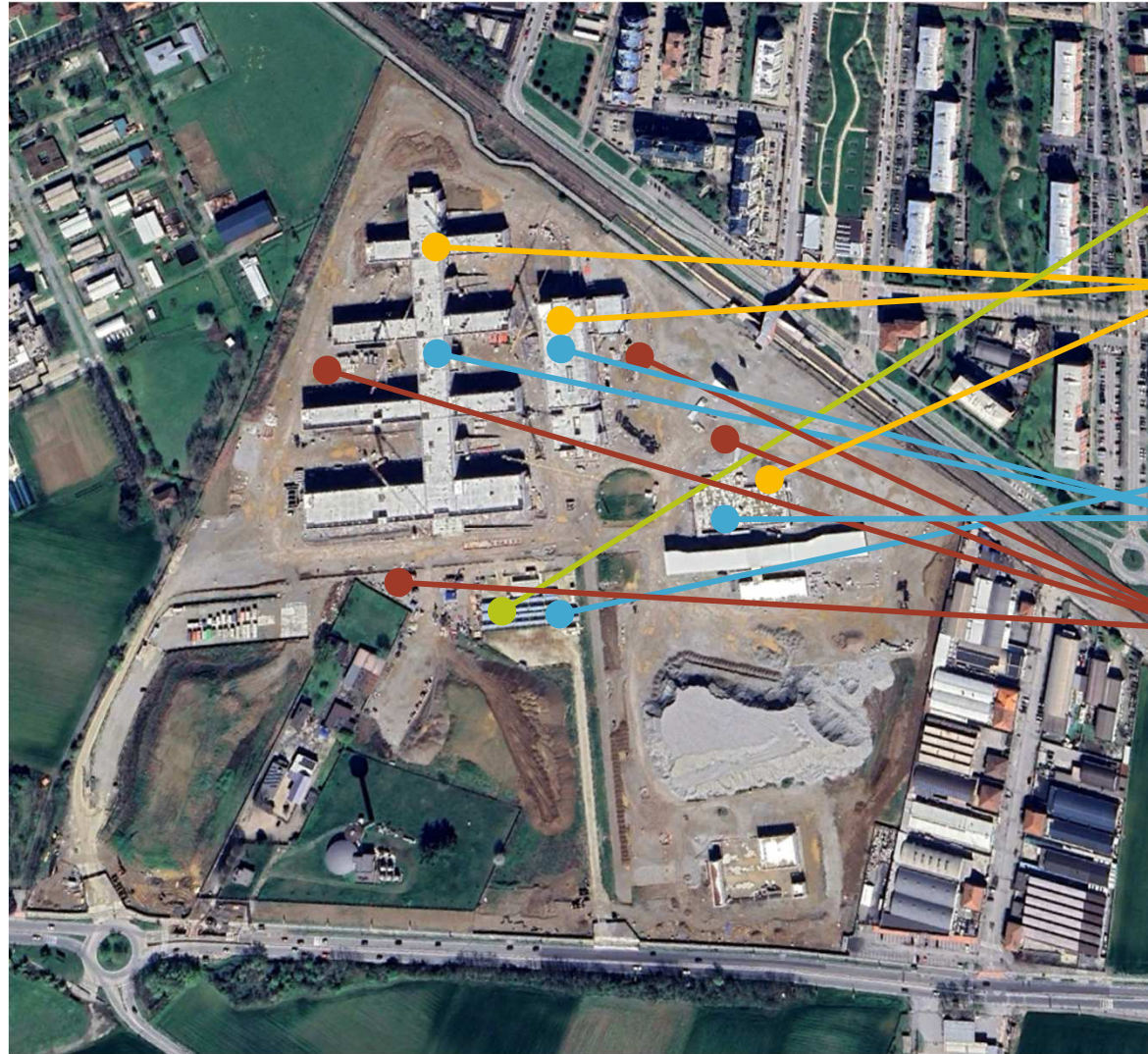
- Construction and Demolition Waste Management
- Building Product: EPD
- Building Product: Sourcing of Raw Materials
- Building Product: Ingredients Optimization

I criteri LEED – Building Credit



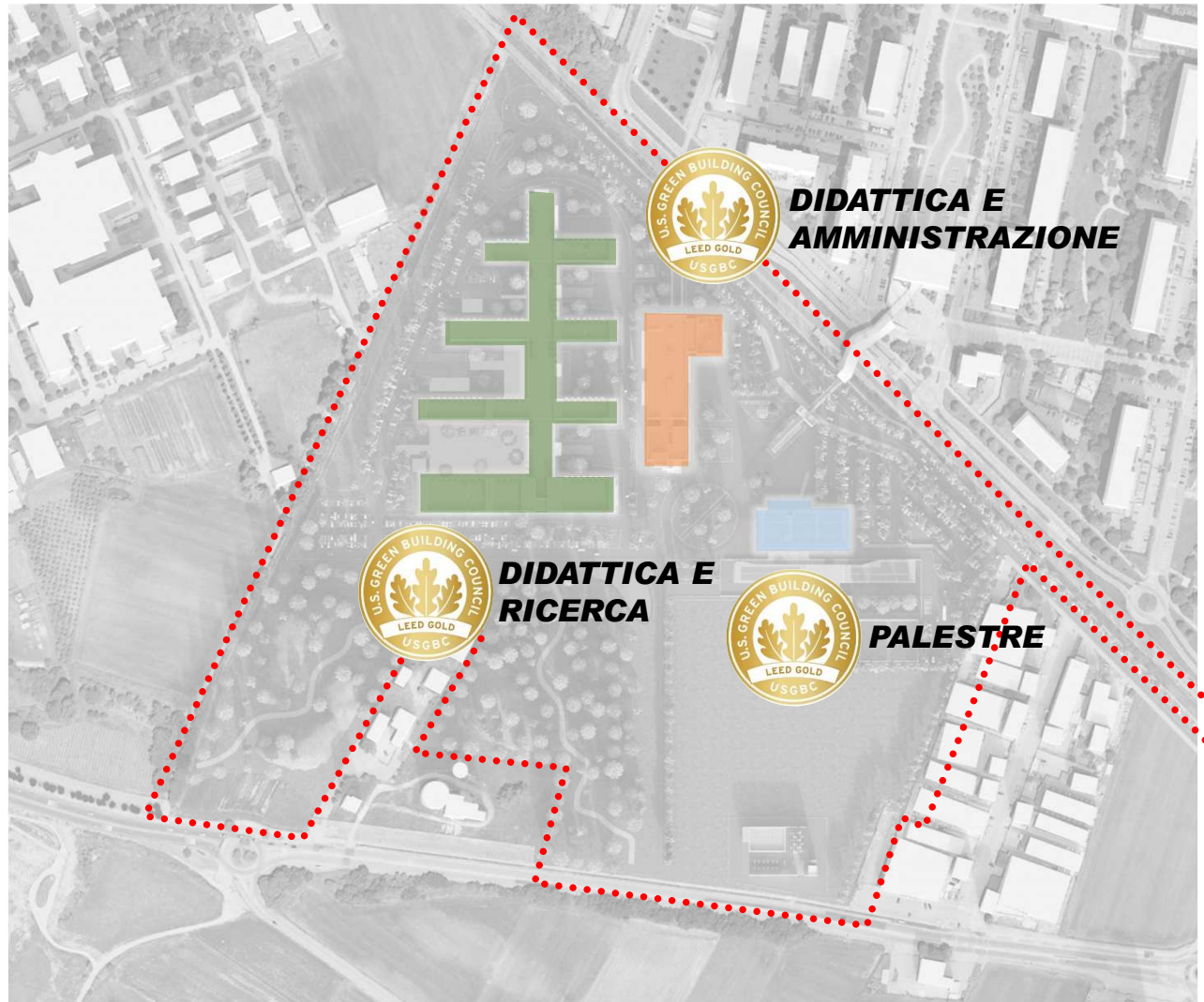
-  **Water Efficiency:**
 - Indoor Water Use reduction
-  **Energy and Atmosphere:**
 - Energy Performance
-  **Indoor Environmental Quality:**
 - Indoor Air Quality Performance
 - Tobacco Smoke Control
 - Low Emitting Materials
 - Interior Lighting
 - Quality Views
 - Acoustic Performance
-  **Innovation:**
 - Purchasing Lamps
 - O+M Starter Kit
 - Sustainable Wastewater Management

I criteri LEED – Construction Credit



-  **Sustainable Sites:**
 - Construction Activities Pollution Prevention
-  **Energy and Atmosphere:**
 - Fundamental Commissioning
 - Enhanced Commissioning
 - Monitoring Based Commissioning
-  **Indoor Environmental Quality:**
 - Construction IAQ Plan
 - IAQ Assessment
-  **Material & Resources:**
 - Construction & Demolition Waste Management

Punteggio finale e certificazione LEED



Il processo in corso

- Crediti campus pre-approvati
- Design Review in corso per i progetti
- Punteggio previsto prossimo al livello massimo Platinum



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GRAZIE PER L'ATTENZIONE

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