

## Rchlo Ipanema CT - Filial 269

by Anderson Calvo da Silva / 2019-06-14 04:06:16 / International /  
3538 / EN



Primary energy need :

**369.8** kWhpe/m<sup>2</sup>.year

(Calculation method : Primary energy needs )

### ENERGY CONSUMPTION

Economical building

Building

< 50 **A**

51 à 90 **B**

91 à 150 **C**

151 à 230 **D**

231 à 330 **E**

331 à 450 **F**

> 450 **G**

Energy-intensive building

**Building Type** : Downtown store

**Construction Year** : 2015

**Delivery year** : 2015

**Address 1 - street** : 22410001 RIO DE JANEIRO, Brazil

**Climate zone** : [Aw] Tropical Wet & Dry with dry winter.

**Net Floor Area** : 1 304 m<sup>2</sup>

**Construction/refurbishment cost** : 4 422 483 €

**Number of Visitor** : 186 Visitor

**Cost/m2** : 3391.47 €/m<sup>2</sup>

**Certifications :**



**Proposed by :**



## General information

On December 10, 2015, Riachuelo opened its first store in the Ipanema neighborhood, in Rio de Janeiro. The unit occupies the building where the iconic Chaika Cafeteria operated. With 1,378 m<sup>2</sup> of constructed area.

The store is the first LEED (Leadership in Energy and Environmental Design) certification process awarded by the U.S. Green Building Council (USGBC). Among the main sustainable initiatives are the installation of a rainwater reuse system, green roof deployment and the use of LED lighting.

## See more details about this project

<http://vogue.globo.com/moda/moda-news/noticia/2015/12/riachuelo-inaugura-sua-primeira-loja-verde-em-ipanema-no-rio-de-janeiro.html>

<http://www.blogdafal.com.br/2016/01/18/riachuelo-ipanema/>

## Photo credit

Studio Demian Golovaty

## Stakeholders

## Contractor

Name : LOJAS RIACHUELO S/A

Contact : EDUARDO TRAJANO

<https://www.riachuelo.com.br/>

## Construction Manager

Name : NOROESTE CONSTRUÇÕES E EMPREENDIMENTO LTDA

Contact : RENATO BARTOLOMEI

<https://www.ncel.com.br>

## Stakeholders

Function : Construction Manager

NOROESTE CONSTRUÇÕES E EMPREENDIMENTO LTDA

RENATO BARTOLOMEI

<https://www.ncel.com.br>

CONSTRUTORA E INSTALADORA

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Function : Certification company

SUSTENTECH

Patrick Murisset

<https://www.sustentech.com.br>

Consulting and certification manager LEED

## Contracting method

General Contractor

## Type of market

Table 'c21\_germany.rex\_market\_type' doesn't exist

## If you had to do it again?

Innovative and motivating experience.

## Building users opinion

A new experience where one can share the technology associated with the well-being of people without losing sight of the environment.

### Energy consumption

Primary energy need : 369,80 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 497,51 kWhpe/m<sup>2</sup>.year

Calculation method : Primary energy needs

Breakdown for energy consumption : Lighting: 81.07 kWh/m<sup>2</sup>.year

Equipment 78.74 kWh/m<sup>2</sup>.year

Cooling: 38.96 kWh/m<sup>2</sup>.year

Pumps and auxiliary: 22,34 kWh/m<sup>2</sup>.year

Fans: 27.94 kWh/m<sup>2</sup>.year

Hot water: 7.38 kWh/m<sup>2</sup>.year

Exterior usage: 0,32 kWh/m<sup>2</sup>.year

Initial consumption : 6 500,00 kWhpe/m<sup>2</sup>.year

### Envelope performance

Envelope U-Value : 1,61 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

Walls U-value: 2.67 W/(m<sup>2</sup>\*K)

Roof U-value: 0.62 W/(m<sup>2</sup>\*K)

Windows U-value: 6.3 W/(m<sup>2</sup>\*K)

Skylight U-value: 6.3 W/(m<sup>2</sup>\*K)

For the envelope u-value were considered only the opaces surfaces

Building Compactness Coefficient : 0,15

Indicator : I4

Air Tightness Value : 10,00

### Real final energy consumption

Final Energy : 256,81 kWhfe/m<sup>2</sup>.year

## Systems

### Heating system :

- No heating system

### Hot water system :

- No domestic hot water system

### Cooling system :

- Water chiller
- Fan coil
- VRV Syst. (Variable refrigerant Volume)

### Ventilation system :

- Free-cooling
- compensated Air Handling Unit

### Renewable systems :

- No renewable energy systems

### Other information on HVAC :

High efficiency chiller in cooling system. 66TR.

### Solutions enhancing nature free gains :

100% LED lighting system / automation / air conditioning equipment in high efficiency and TAE with treated insufflation./Heat cover with heat sink.

## Smart Building

### BMS :

equipamentos de alta eficiência, iluminação led, vidros e cobertura com altor refletivos e isolamento de calor, utilização de agua de chuva, todo um beneficio a favor de um bem estar, consciência em pró ao meio ambiente, retorno do investimento aplicado.

**Users' opinion on the Smart Building functions :** benéfico, simples, arrojado e eficiente/objetivo.

Environment

Urban environment

The RIACHUELO-Ipanema is a pleasant and healthy environment for employees and visitors, not only from an architectonic and decorative point of view. All indoor environments have the climatic conditions (temperature and air quality) and lighting ideal for all activities, with emphasis on optimizing the energy performance and operating costs of your energy systems (equipment and accessories), directly benefiting the company . Public access with comprehensive option, metro and bus. close to laser areas (beaches) and squares.

Land plot area : 382,00 m<sup>2</sup>

Built-up area : 100,00 %

Green space : 123,00

## Products

### Product

Lojas Riachuelo Conceito - certificação leed serie Gold

FAL DESIGN E PROJETOS

CLAUDIA BEIRÃO CARDOSO

<http://www.blogdafal.com.br>

Product category : Table

'c21\_germany.innov\_category' doesn't exist  
SELECT one.innov\_category AS  
current,two.innov\_category AS  
parentFROM innov\_category AS  
oneINNER JOIN innov\_category AS two  
ON one.parent\_id = two.idWHERE  
one.state=1AND one.id = '6'

rainwater system

100% led lighting system

lighting and air conditioning system

controlled by automation

indoor / vertical landscaping.

Innovative, model and of great satisfaction.

The space, considered the first 'green store'

of the network in Brazil, has several sustainable initiatives, among them the installation of a rainwater reuse system, the implementation of a green roof and LED lighting.



## Costs

## Construction and exploitation costs

Global cost : 4 422 483,36 €

Reference global cost : 2 915 563,20 €

Renewable energy systems cost : 155 605,90 €

Global cost/Visitor : 23776.79

Reference global cost/Visitor : 2915563.2

Cost of studies : 196 555 €

Total cost of the building : 3 275 914 €

Subsidies : 523 080 €

## Energy bill

Forecasted energy bill/year : 243 000,00 €

Real energy cost/m<sup>2</sup> : 186.35

Real energy cost/Visitor : 1306.45

## Health and comfort

### Life Cycle Analysis

It was used the software eToolLCD from the company eTool. The LCA is according EN 15978 considering A1-A3 / B1-B7 / C1-C4 and D. The scope includes raw materials and components / construction / on going operational and maintenance impacts and end of life

For the purposes of fair comparisons with other like construction assets the impacts have been quantified kgCO<sub>2</sub>- eq/year/m<sup>2</sup>GrossFloorArea year. The estimated design life of the benchmark is 60 years and the maximum durability is 150 years. The result of G

### Water management

Consumption from water network : 10,00 m<sup>3</sup>

Consumption of grey water : 7,00 m<sup>3</sup>

Consumption of harvested rainwater : 20,00 m<sup>3</sup>

Water Self Sufficiency Index : 0.73

Water Consumption/m<sup>2</sup> : 0.01

Water Consumption/Visitor : 0.05

Rainwater 15000lts

3000lts Drinking Water

Technical water fire 10000lt

Potable water associated with 2500lts reserve of incentive

Destination of water for basins and garden 2000lts

## Indoor Air quality

Sensor that measures the level of CO<sub>2</sub>, which aided by automation acts on the electric damper controlling the opening of the air renovation.

## Comfort

**Health & comfort :** Glass facade and skylight series special anti-glare and heat sink, ensuring the translucent during daylight and insulating the heat layer.Slab with garden and waterproofing paint series special (white) insulation of actions to the solar rays giving the air of freshness to slab isolating the thermal load.Air conditioning and TAE with treated insufflation.

**Calculated indoor CO<sub>2</sub> concentration :**

400 a 700mmg/m<sup>3</sup>

**Measured indoor CO<sub>2</sub> concentration :**

420mmg/m<sup>3</sup>

**Calculated thermal comfort :** Set temperature 23+-1°C

**Measured thermal comfort :** 23°C

**Acoustic comfort :** Building in masonry with internal coating in Drywall and joinery.Equipment with motors and air vents with attenuators.

## Carbon

### GHG emissions

**GHG before use :** 0,50 KgCO<sub>2</sub> /m<sup>2</sup>

**Building lifetime :** 250,00 year(s)

**GHG Cradle to Grave :** 81 500,00 KgCO<sub>2</sub> /m<sup>2</sup>

## Contest





# Reasons for participating in the competition(s)

The store is the first LEED (Leadership in Energy and Environmental Design) certification process awarded by the U.S. Green Building Council (USGBC). Among the main sustainable initiatives are the installation of a rainwater reuse system, green roof deployment and the use of LED lighting.

## Building candidate in the category



Energy & Hot Climates



Users' Choice

