PLANET
smart city

WUF 10
World Urban Forum
المنتدى الحضري العالمي

Smart Community Matrix
a new tool for measuring smart social neighborhoods

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Who we are

A Real Estate - Tech Company

A leader **disrupting the affordable housing market** worldwide

Masterplan of 1° Smart City under construction in Brazil (Fortaleza): Smart City Laguna

Planet is an **innovative** and **disruptive** real estate operator unique in its approach based on **large, replicable**, **service-oriented smart formats.** Planet's pioneering approach consists of **integrating the most advanced and smart technologies and innovations** (200+) into the design of **large residential neighbourhoods**.

We generate **2 revenue streams** from each development:

1) Planet's standard affordable housing Real Estate project generate **very interesting returns and investment multiples over a short period of time**

2) Furthermore we aim at generating **recurring revenues** from our clients through **lifetime services** and **big data analytics**, facilitated by Planet's in-house App. These could be very significant in the Medium term

Planet is currently building **2 smart cities** focussed on affordable housing in Brazil and is about to launch a **third project in India**. Our **pipeline** of projects is **significant and growing**. We aim at launching **31 new projects by 2023**

The **global affordable housing market is very large** (US$300bn annually) and growing, highly non-cyclical, uncorrelated to GDP trends

We have recently **raised in excess of €50m** backed by a very widespread strong shareholders base. The company BoD has an **open authorization to seek additional capital** to fuel its expansion strategy.
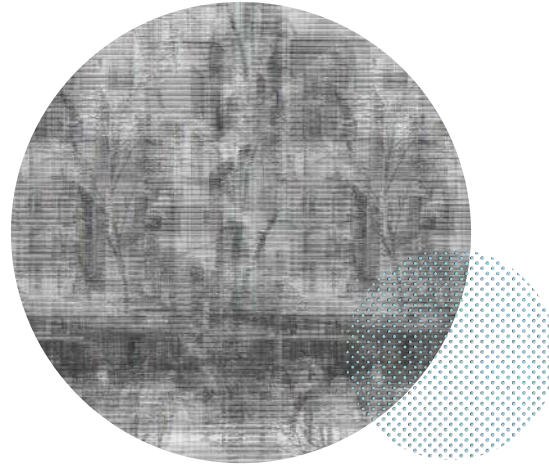
Planet Smart City 3 main assets

TOWNSHIPS

n° 800-3000

m² Units 55 sqm

DISTRICTS

n° 300-800

m² Units 42 sqm

COLIVING BUILDINGS

n° 150-300

m² Units 22 sqm

Planet Smart City places that matter

Urban Planning

Public spaces

APP

Innovation Hub

Landmark

Houses

Projects characterized by:

- Innovative **urban planning**
- Smart **infrastructure**
- Smart **Technology**
- **Social innovation** programs
- District **App** for residents
- **Sustainability** and care for the environment

Planet Smart City concept

It is a format: houses may differ per country BUT **services are similar everywhere**

It is **highly replicable**: 80% of its features are the same as not house centered but service centered

- No geographical barriers

- In house Added Value

- Fully integrated

- Improve our project's timing

- We cover the whole value chain

Focus on solutions: divided into **4 macro-areas**:

Social Innovation

Community
Well-being
Education
Economy
Security

Planning & Architecture

Architecture
Urban functions
Infrastructure
Public space
Mobility

Technological Systems

Data and sensors
Operations & Administration
Network & Devices
Materials
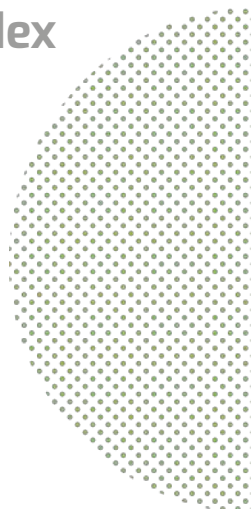Life cycle

Environment

Nature
Air
Soil
Water
Energy

Smart Community Matrix

A smart cities evaluation index

What is the SCM?

The SCM is a digital and interactive tool created for measuring how smart and social a real estate development is.

The Smart Community Matrix (SCM) has been developed by Planet in collaboration with ARUP Italia.

The system evaluates the solutions integrated in the project, chosen and included by the developer in order to achieve the **qualities** of an intelligent city. The tool has been designed in order to create a clear and quantifiable index which is measurable and universally applicable.

The SCM objectives

1. Quantify the achievement of the smart city qualities, whether technological aspects or social aspects, to support real estate developments in achieving a high quality product

2. Have a system which allows a **comparative evaluation** for any project worldwide.

3. Permits the **solutions to be balanced** and a cost-benefit analysis during the planning phase.

4. Attribute a **qualitative and measurable value** to the real estate development that can be used as defining feature of the development.
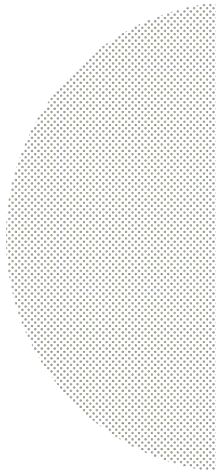
The SCM target audience

The Smart Community Matrix has been designed mainly for the **real estate developer**..

The value provided by the index gives the real estate developer quantitative evidence of the results achieved, increasing the immediate and future value of their investment, gaining a distinctive positioning with respect to its competitors.

The tool can also be used by the real estate investor to structure a dialogue with **public entities** (e.g. local administrations) and private entities (e.g. service providers), as well as **social managers** and **foundations**.

Taxonomy

4
Macroareas

Ecosystem resources

Built environment

Technological Systems

Society

20
Areas

Nature
Air
Soil
Water
Energy

Architecture
Urban functions
Infrastructure
Public space
Mobility

Operations and administration
Sensors
Network & devices
Materials
Lifecycle

Community
Wellbeing
Education
Economy
Security

200
Smart solutions

Smart bench
Smart gym
Solar bricks
Video surveillance system
SOS column
Smart electricity metering
Community drinking water dispenser
Interactive totem
Smart water metering
Smart lighting
Intelligent garbage bins
Wetlands
Microhabitats for local fauna
Pedestrian accessibility to services
Wave power plant
Repair and reuse workshop
Bottle recycling totem
Cultural hub
Advanced digital platform
Electrical grid controls
…

6
Qualities

Attractive

Inclusive

Healthy

Digital

Informative

Efficient

Construction process

Relationships between solutions & qualities

Attractive
- Does it create a favourable and comfortable environment, and attracts new residents and users?
- Does it attract new investments (public, private, non-profit) in the project area ?

Inclusive
- Does it create community spaces and accessible services for everybody (age, gender, location, education level and costs)?
- Does it promote activities and programs in order to encourage a collaborative environment?

Healthy
- Does it promote a healthy environment and the mental and physical health of people?
- Does it promote safe personal conditions, real or perceived (active or passive)?

Digital
- Does it make use of digital technologies in order to monitor and analyze data?
- Does it facilitate connectivity, interactivity, process management and remote services use?

Informative
- Does it provide new information and make it accessible to several users?
- Does it promote capacity building and/or the conscious actions of people?

Efficient
- Does it result in time and/or economic savings?
- Does it protect ecosystem and/or energy resources?

Construction process

Relationships between solutions & areas

Nature: issues related to flora and fauna, protection of different species, and encouraging biodiversity
Air: issues related to treating and purifying air resources.
Soil: physical and chemical changes of soil characteristics
Water: issues regarding treating, purifying, and reusing water resources.
Energy: energy production, management or saving (electricity, mechanical, thermal)

Architecture: urban and construction planning of the real estate development
Urban functions: the way in which various functions present in the area of intervention are used (schools, health, transport ...)
Infrastructure: intended as the city's water, electricity, sewer, and telecommunications network
Public space: deals with public or private property that are used collectively to create connective spaces
Mobility: solutions which reduce time and improve travel for vehicular, cycle, and pedestrian traffic in the smart city

Operations and administration: organization and management of public and private services
Sensors: devices capable of collecting and recording environmental and social data
Network & devices: facilitates network connections, communication with other actors, and the exchange of information remotely
Materials: innovative materials able to improve the environment, economics, and well-being of the individual
Lifecycle: is concerned with the reduction, reuse, recycling, collection, and recovery of waste

Community: social inclusion, creation of inclusive events, community creation, reduction of demographic exclusion, and education
Wellbeing: intended both as the physical health of the individual (e.g. reduction of pollutants) and their mental health (e.g. accessibility to material goods)
Education: promotion of capacity building of individuals through access to education, courses, and information events
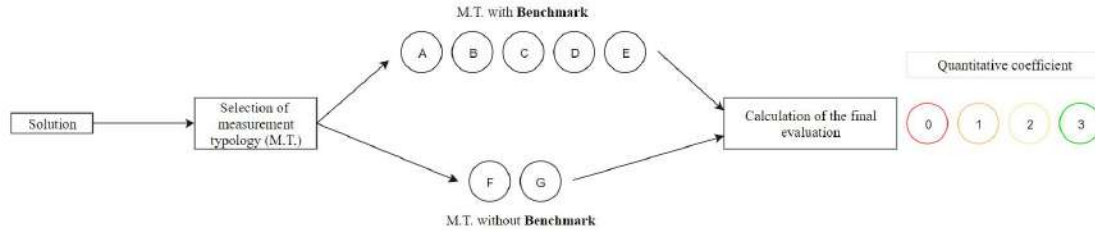Economy: opportunities in terms of economic savings and returns, encouraging the new activities and job creation, reduction of economic exclusion, and time savings
Security: aspects related to active and/or passive security

Construction process

Solution quantification

T.M. A | Number of solutions per capita

T.M. B | Proximity

T.M. C | Number of solutions for any building or accomodation

T.M. D | Extension and density

T.M. E | Performance and consumption

T.M. F | Diffusion in appropriate spaces

T.M. G | Management process phase

Evaluation Method

Selection of Solutions
The first phase of the tool requires the identification of existing solutions in the project based on the complete list of solutions in Planet's catalog.

Measurement of implementation level
For each identified solution an implementation level is assigned from 1 to 3 based on a benchmark system.

Final result
Following the evaluation the real estate development will be assigned a final score.
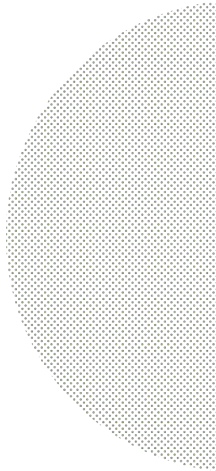
The final result

The evaluation certificate has two sections.

The first shows:
- a value expressed as a **number with two decimales** based on a scale from 0 to 10
- the degree that the qualities are achieved

The second shows:
- the 6 qualities as a percentage
- the relationships between the individual elements present in the calculation: **quality**, **components,** and **areas**
- the points achieved from three different areas of the evaluation:

  1. solutions from the original project
  2. solutions applied for compliance with the **local regulatory system**
  3. solutions **offered by the real estate developer**
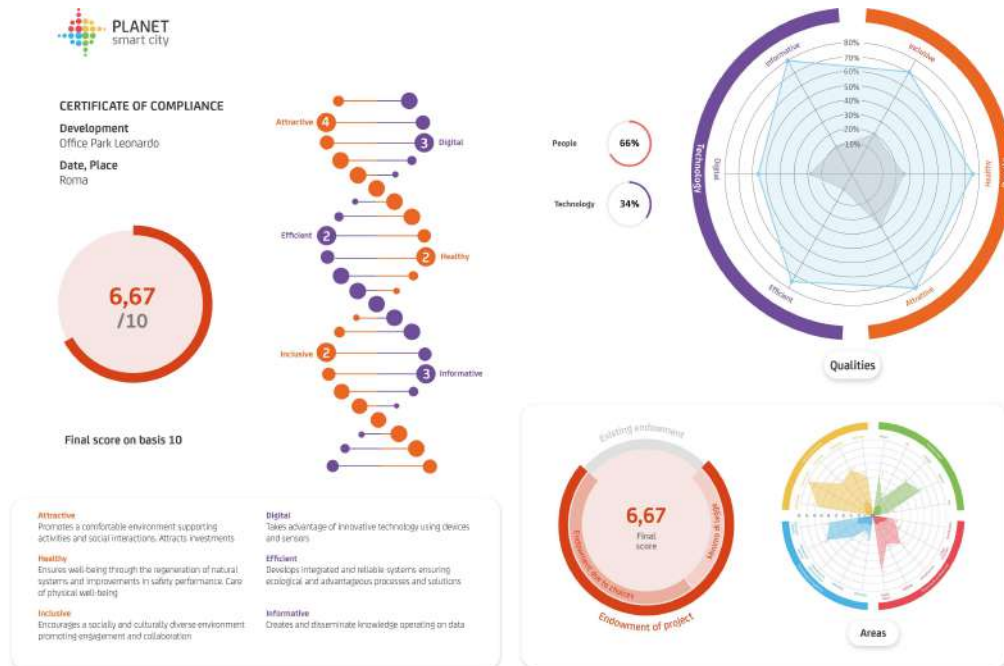
SCM, LEED and WELL

Assessment taxonomy

SCM
20 Areas

Nature
Air
Soil
Water
Energy

Architecture
Urban functions
Infrastructure
Public space
Mobility

Operations and administration
Sensors
Network & devices
Materials
Lifecycle

Community
Wellbeing
Education
Economy
Security

LEED cities & comm
9 Categories

Natural systems and ecology
Water efficiency
Energy and greenhouse gas emissions
Transportation and land use
Integrative process
Materials and resources
Quality of life
Innovation
Regional priority

WELL comm
11 Concepts

Air
Water
Light
Thermal comfort
Materials
Community
Nourishment
Movement
Mind
Sound
Innovations

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