



BuildingLife

Executive Summary

The construction sector needs to change.

The construction sector produces a lot of waste and puts out a lot of CO² in the environment. A major reason why the construction sector lacks behind in circularity is that the quantity and value of building materials is often unknown. The goal of BuildingLife is to provide insights in these values and hence make the circularity potential of building materials transparent. BuildingLife provides insights into the quantity and value of materials using Artificial Intelligence. To accommodate the user, the user only has to specify the address of the building and our service does all the work. We also provide functionality for multiple buildings at once. BuildingLife initially focusses on project developers and housing corporations as they can gain a lot of value of BuildingLife as it allows them to take circularity into account before making any crucial decisions.

We want to accelerate the circularity within the construction.



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The construction sector has to change

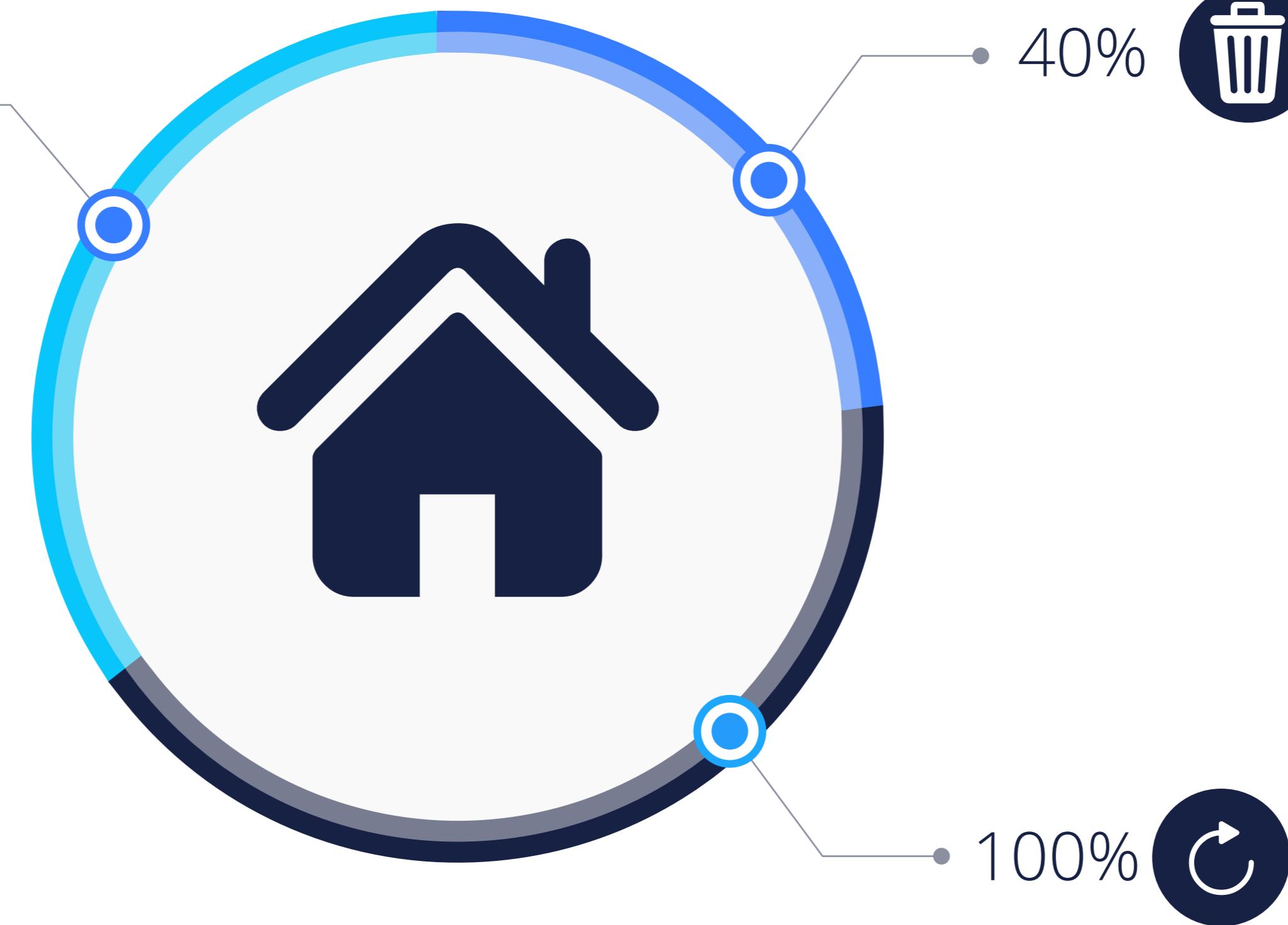
Circularity is coming

Of the total CO₂ output

The construction sector is responsible for 5% of the total worldwide CO₂ output. This is 2.5 times more than the entire aviation sector.



5%



The construction sector is essential for our society. The houses we live in, the roads we use to travel and the offices we work in are all realized by the construction sector. However, the construction sector produces a lot of waste and has a big environmental footprint. Raw materials used for construction are responsible for an immense amount of CO₂ output.

Of total waste

The construction sector in the Netherlands produces more waste than industry and consumers combined



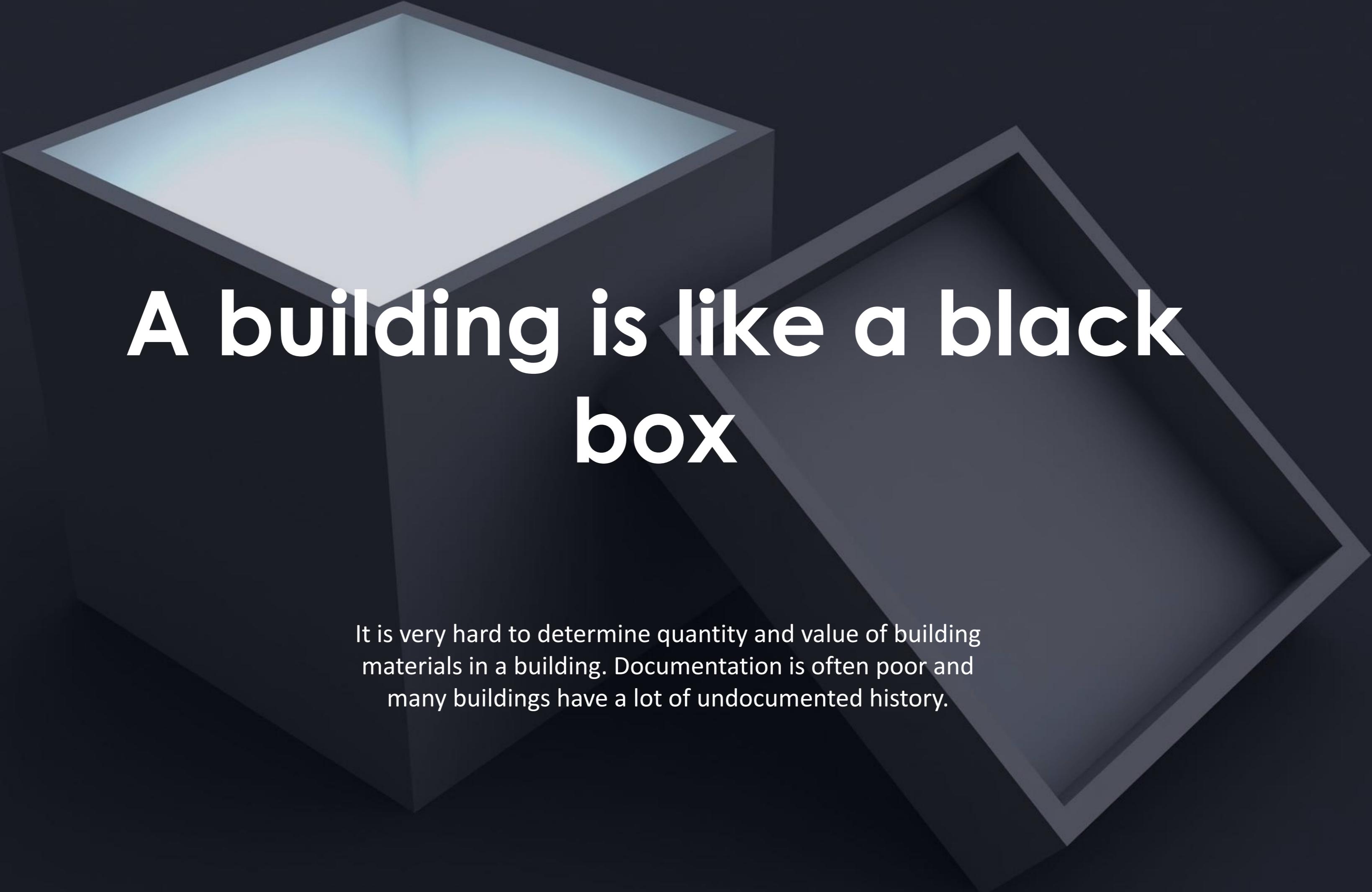
40%



100%

Circularity required

By 2050 the whole construction sector needs to be circular. For that we must reuse building materials. The construction sector has a long way to go.

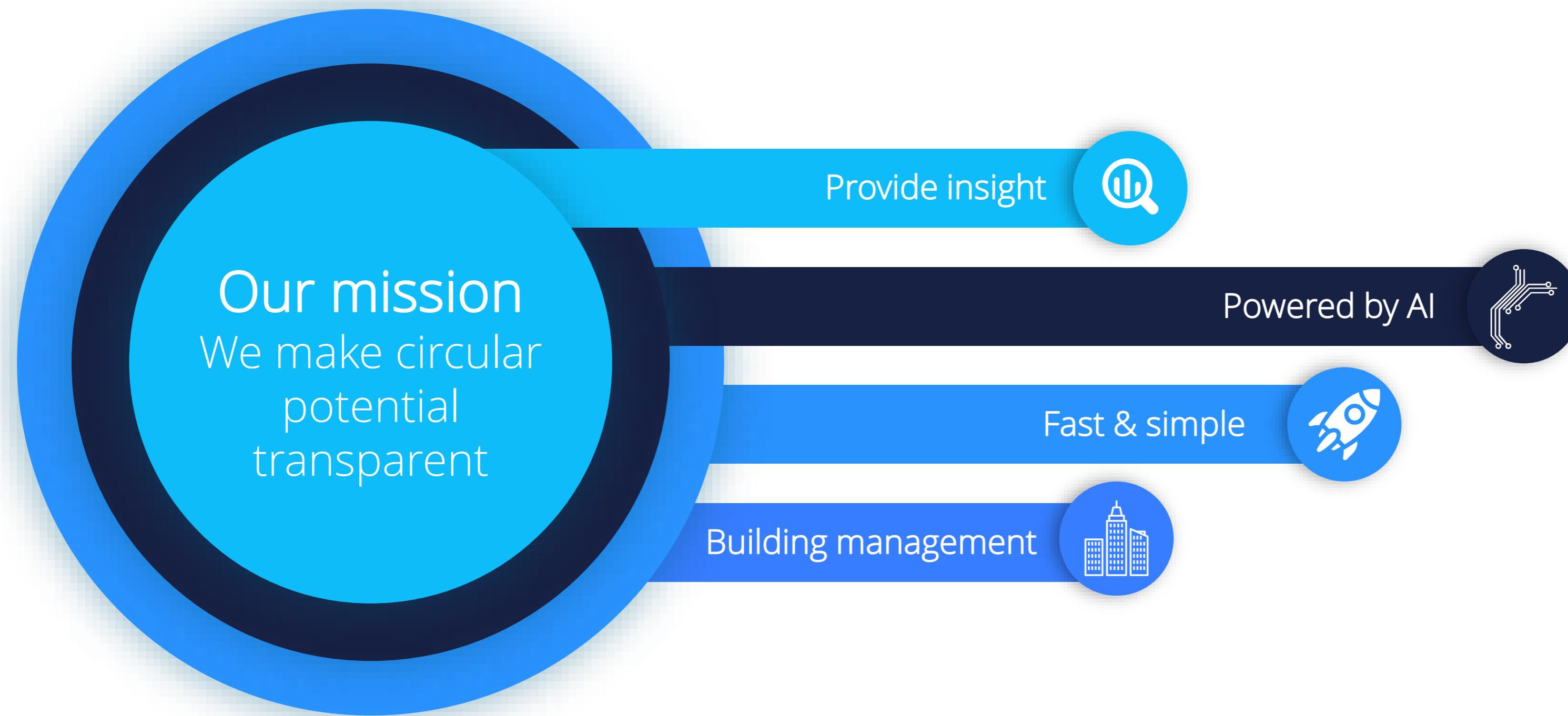


A building is like a black box

It is very hard to determine quantity and value of building materials in a building. Documentation is often poor and many buildings have a lot of undocumented history.

We provide insight in material value with AI

Circularity is coming



Provide insight

We as Buildinglife, want to provide insight into the material value of buildings. We focus on both the quantity of building materials and their value.

Powered by AI

We use Artificial Intelligence in the form of machine learning to generate parameters, like scanning the façade on street view. We use the parameters to predict building materials.

Fast & simple

Our solution is fast and simple. We only need a postal code and house number and we will get all the information you need.

Building management

Buildinglife offers functionalities to make estimations for entire urban areas. This allows for circular decision making on the redevelopment of these areas.



The product

- A simple web app
- Interactive insights

A Simple Web App



Fully responsive

Our web application can be used anywhere with internet access. It scales to all devices



Only an address is required

The only thing we need is an address. We will get all the data we need to give you the perfect estimation. We use several APIs and google street view to scan the facade.



Insight

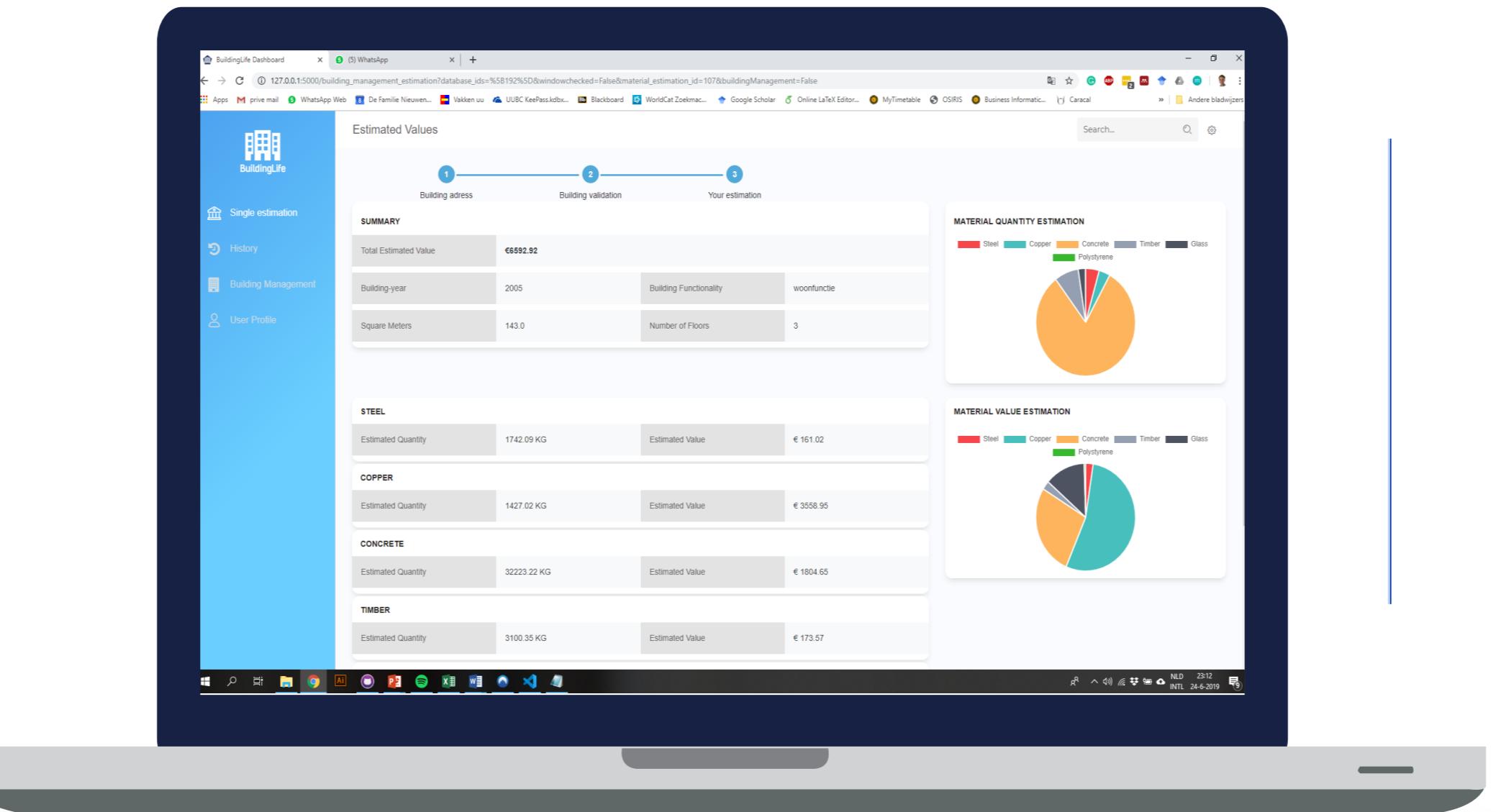
Our web application provides interactive insights into the quantity of materials and their value. It is suitable for both a single building as entire urban areas.

Interactive

The dashboard includes several scenarios to allow for decision making, like complete demolition, transformation or renovation.

Connect

To publish the results you can also generate a report or load the data to One Click LCA, to assess the environmental impact of the buildings



The Buildinglife web application

interactive
insights

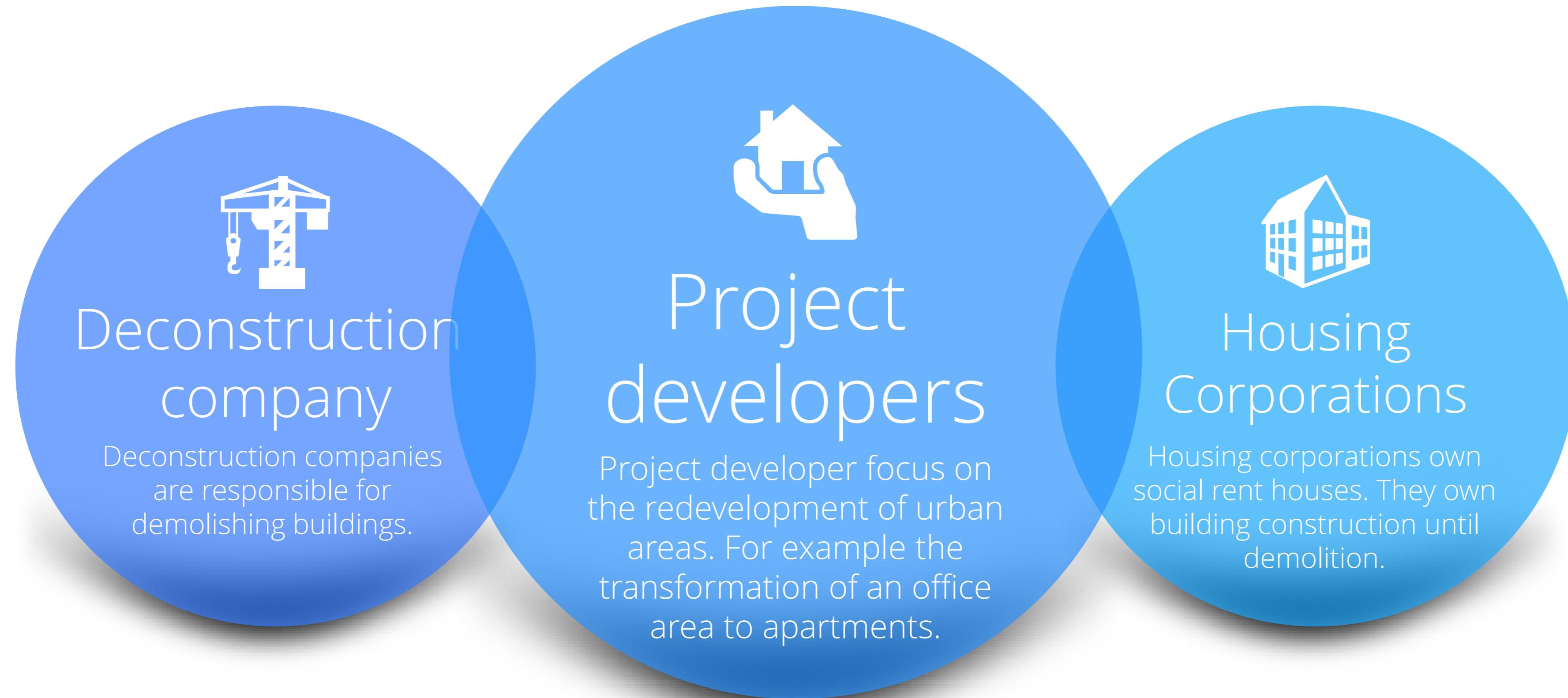


The market

- Three customer segments
- There is a huge market
- No direct competition

Three customer segments

Project developers and housing corporations as first focus



Added value:
Develop business case for deconstruction projects.

Added value:
Take circularity into account during redevelopment plant. Perform circular scenario analyses (e.g., should I transform of demolish a building).

Added value
Take circularity into account for decision making on their building portfolio.

There is a huge market

Materials are extracted from buildings often



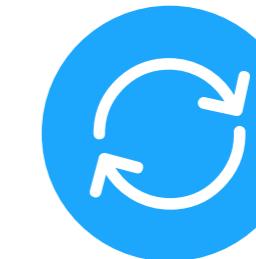
The construction sector is a big market in the Netherlands and with € 70 billion euros it accounts for 4,5% of the total GDP (bouwend Nederland, 2019).



Over 12.000 demolitions take place every year in the Netherlands (CBS, 2018), materials are not always reused, this needs to change.



A buildings transformation changes the purpose of a building (e.g., office to apartment. This requires to demolish a large part of the building (CBS, 2018).



The construction sector is interested



"If you get this working, you have gold in your hands."

~ Anthonie van Egmond
Commercial Manager Innovative Techniques



"Assessing building material quantity and its value is currently a risk factor for us."

~ Axel Hendriks
Commercial Director



"We do not have this type of knowledge internally. It would allow us to take circularity into account."

~ Jürgen Klaassen
Circular Economy Area Developer

A promising opportunity.



Strengths

- It's simple and fast.
- Scalable in materials and users.
- We promote sustainability.
- We provide circularity insights.

Weaknesses

- Building material data is hard to acquire.
- Accuracy of predictions is yet unknown.

Opportunities

- Government has circular ambition
- Building materials will become scarce in the future.
- We enter a new market.

Threats

- The market is not fully established.
- The construction sector is a traditional sector.
- The political climate surrounding circularity is changing negatively.

No direct competition

Our main competition is manual estimations

Materials database

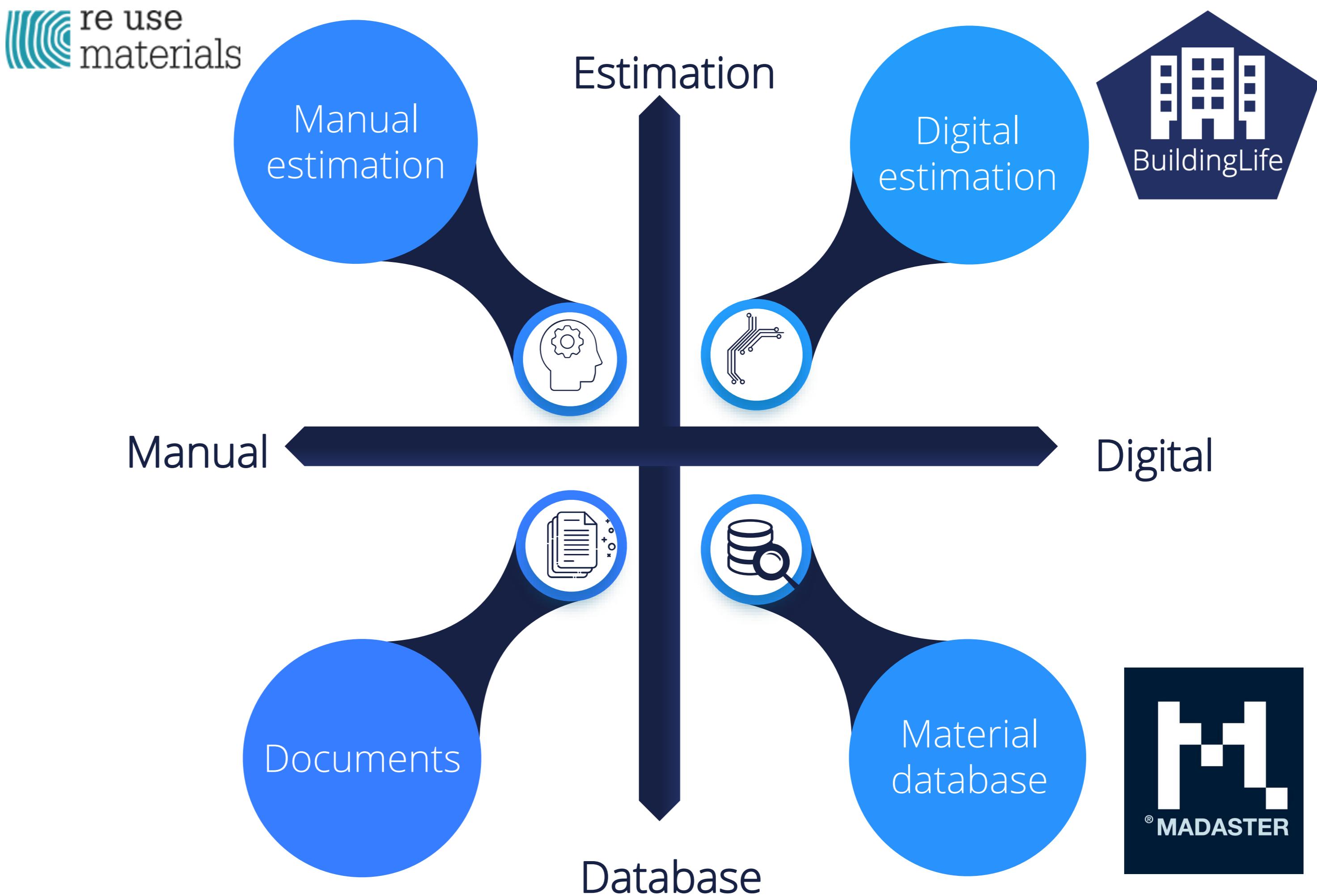
There are other parties that determine the material value of a building. A big player is Madaster. Madaster allows companies to store information construction projects related to materials value. However not even all new building are in madaster, and old building never are.

Manual estimation

Another competitor are companies that do a manual estimation of building. They go to the location and take samples, and take notes to create a report with the building materials in a building. These experts sometimes also work at a external company or at a demolition company themselves.

Digital estimation

We do the estimation digital by using AI. We do not require human interference and we are able to make an estimation for all buildings fast and simple. There is currently no competition that does the same.





Business model

- We use a subscription-based business model
- Marketing strategy based on customer journey

We use a subscription based business model

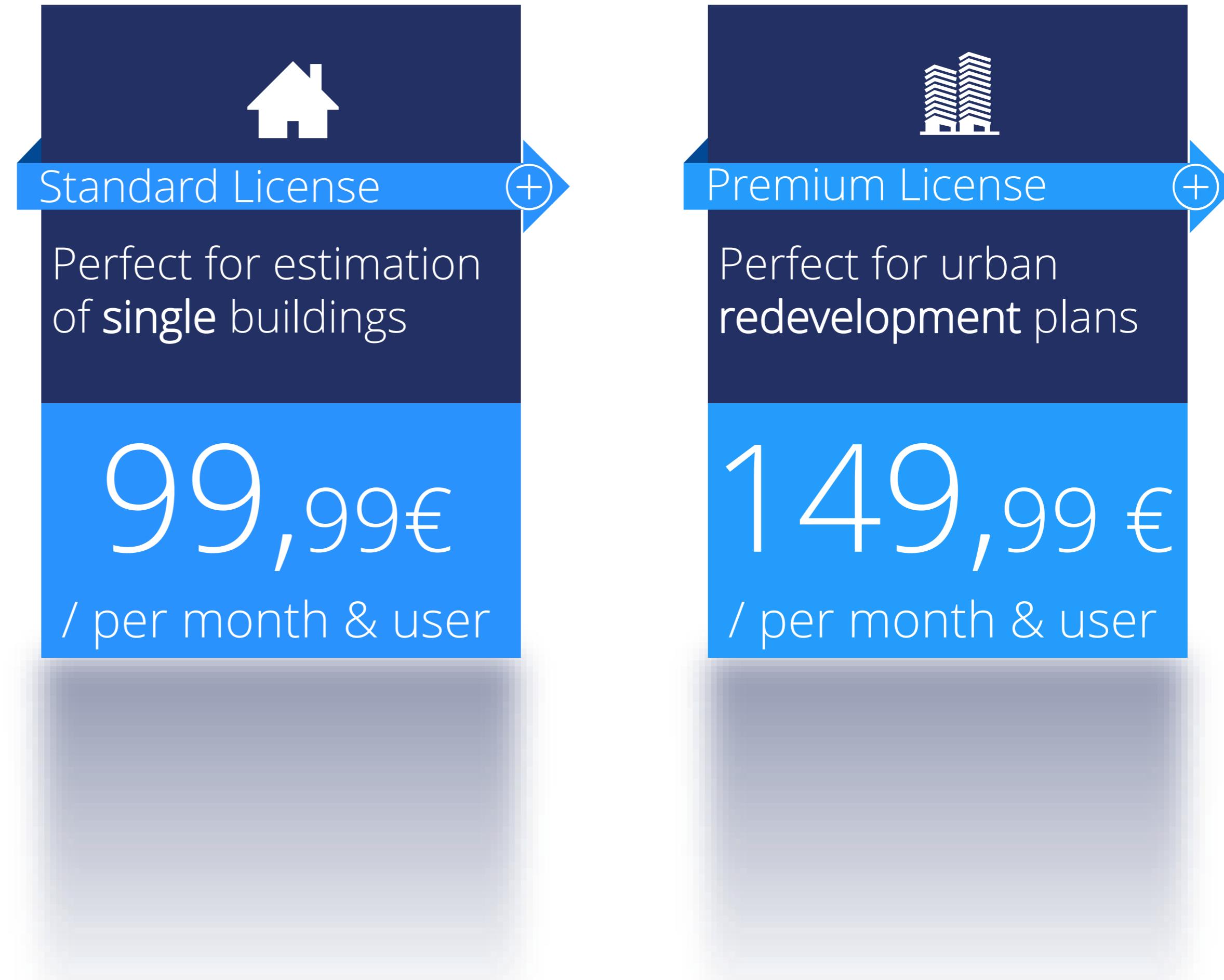
There are two tiers: standard or premium

Subscription based

As is usual in the construction sector, we use a subscription based business model. We use monthly prices per user. The important thing is that we need to be cheaper then the cost for using internal or external experts to do an estimation of the building materials in a building.

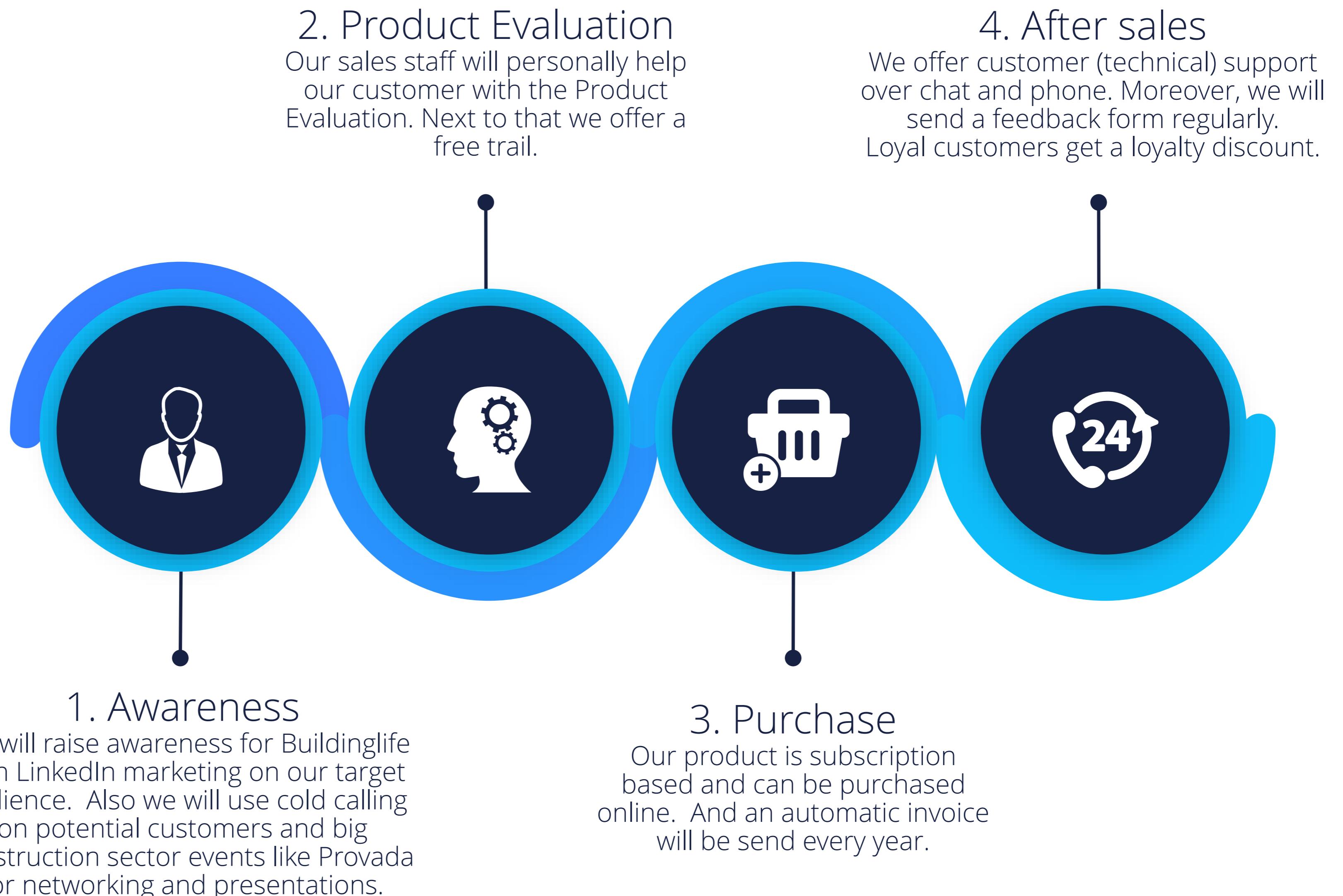
Two plans

We use a two-tier based pricing model. Our standard license is for customer who only need functionalities for single building estimations and this would cost € 129,99 per month. The premium license has serval functionalities to do estimations on the transformation of entire urban areas (e.g., streets, entire postal codes). This is € 199,99 per user per month.



Our marketing strategy based on the customer journey

We support our customer during the whole customer journey. Since we are B2B we offer a lot of personal contact.





Future steps

- Cost Structure
- Financial plan
- Roadmap to launch
- Our team members

Cost Structure

The cost structure is subdivided into three main categories:

- General costs
- Hosting costs
- Employee / Salary costs

Operations

The costs for keeping our service up and running and improvement.

Assumed to decrease relatively to predicted sales. Initially 35%, to 25% later on (decrease of 5% per year)

Heroku

The costs for hosting our service on Heroku.

The professional version with medium service will be used which is 220€ per month.

Building Experts

The costs for hiring building experts to scrape building materials and validate estimations.

Initially, the costs are assumed to be 5000 € per month, decreasing to 2225€ later.

Developers & UI Designers

The costs hiring developers and UI designers to improve our product.

We provide a salary of 2700€ and do intend to hire 4 persons max.

Marketing

The costs for creating relationships with our (potential) customers.

Kept consistent relatively to the predicted sales: 20% of the predicted sales

Vimexx

The costs for arranging the domain name of the website.

The maximum version will be used, which is 9.49 € per month.

Data Scientists

The costs for hiring data scientist to improve our estimation model.

We provide a salary of 2750 € and do intend to hire 2 persons max.

Own Salary

In the first year each of the owners gets a salary of 1900 € per month. In the second year, depending on the success, this increases to 2300.€. If we find success, the salary will increase to 2950 € in the third year.

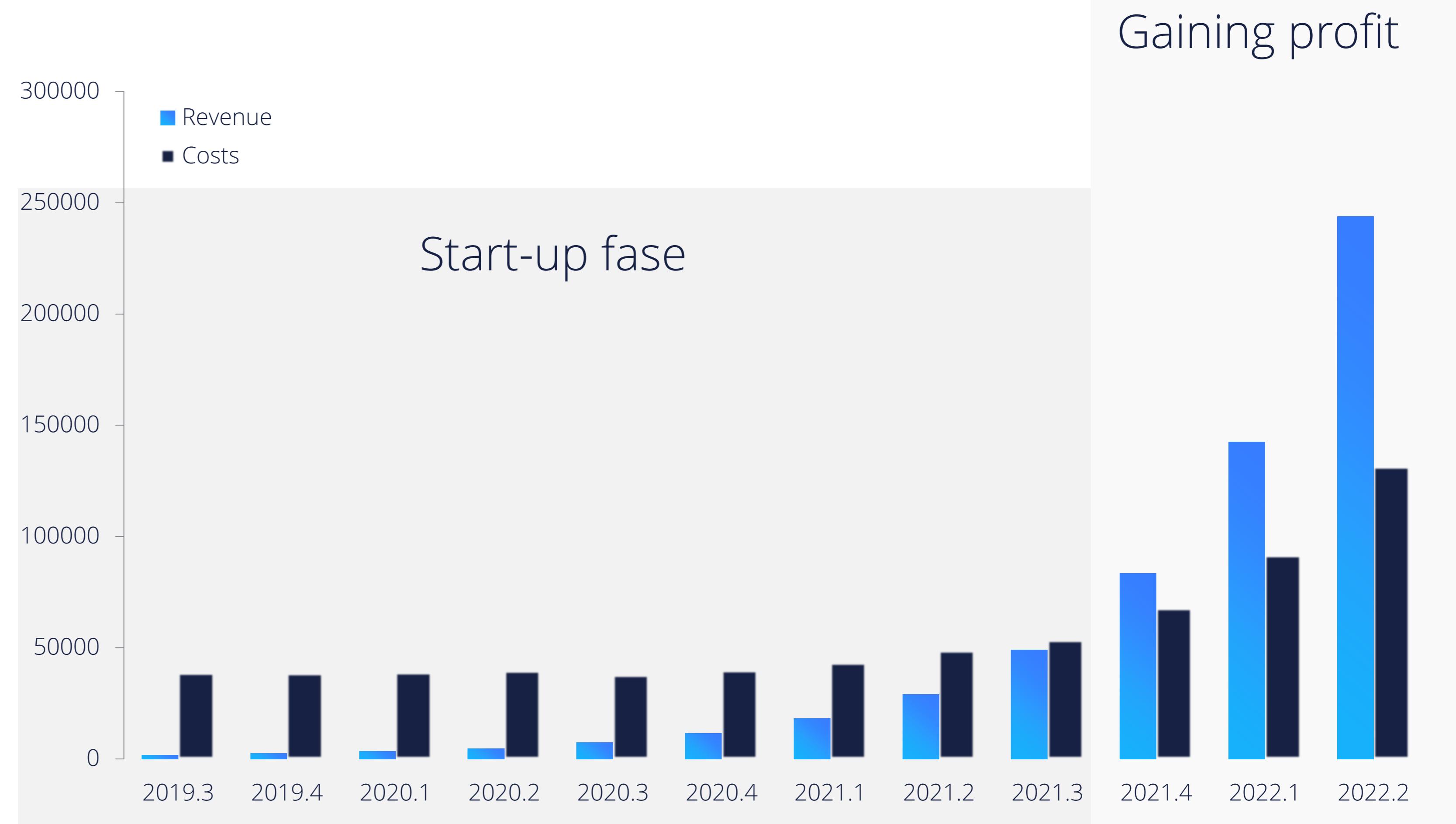


Financial plan – Normal / Expected Situation

Income

We calculated our income based on the total area redevelopment plans in The Netherlands, in total there are 62.000 demolitions on average. We estimate that two persons are involved in a demolition or transformation project per building and can be our target group. Furthermore, we assume a person does 10 redevelopments a year. That makes for 12.400 user in total that can use our application in the Netherlands.

To calculate the amount of users, we assume that we start with 10 users using the standard license, and 5 the premium license. These starting users will probably originate from our pilot at de Alliantie. We assume that in the first year, the user growth is lower. Hence, we assume that the amount of users will only grow with 45% for the standard license and 30% for the premium per quarter. We assume a growth percentage of 65% and 40% (resp.) in the second year. In the third year, we assume we are known better, so we assume a growth percentage of 75% and 50% per quarter, respectively.



Gaining profit

Financial plan – Too High Starting Prices

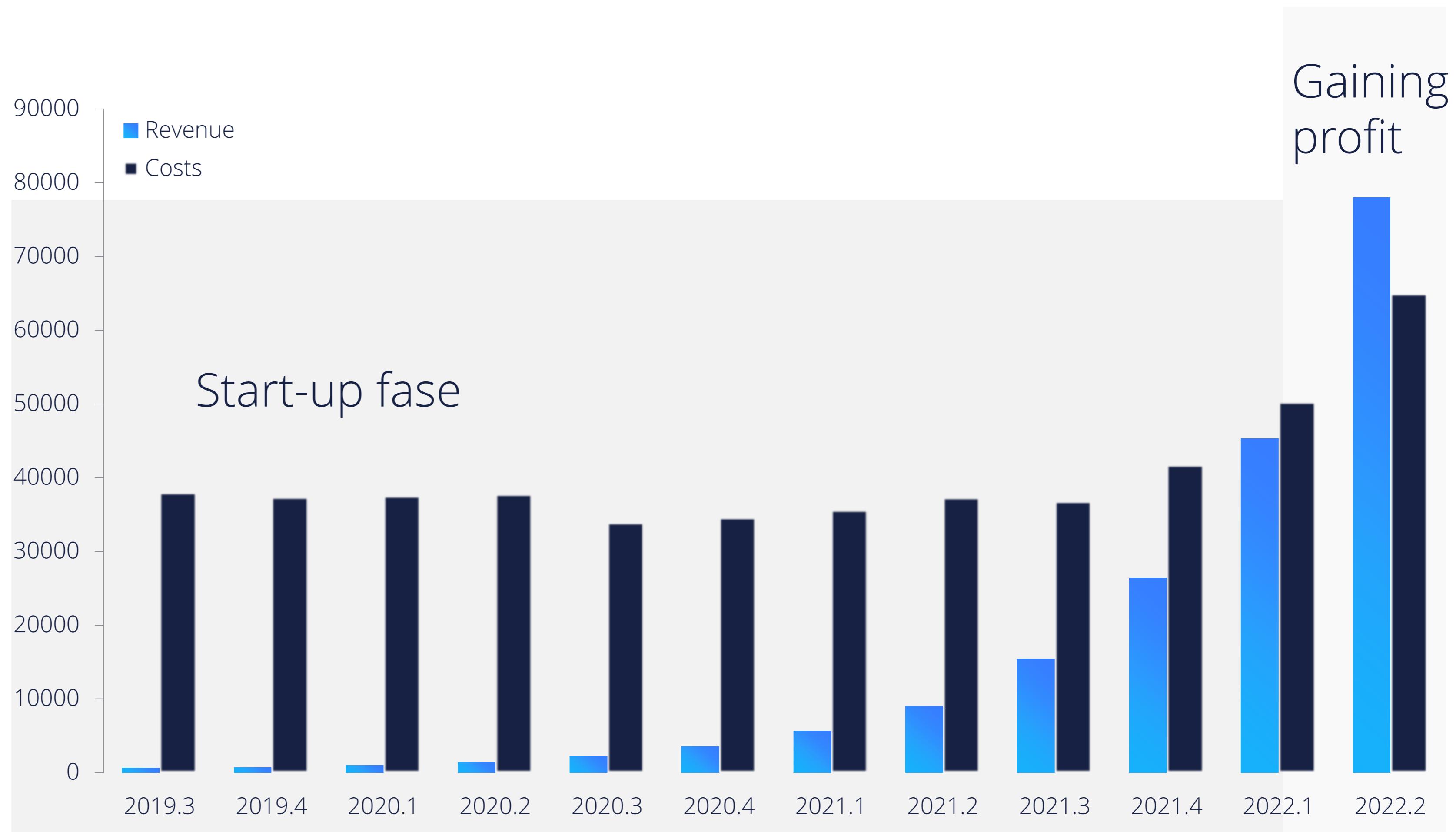
Adjust price

In this scenario we launch our product, however the demand stays low. After one quarter, we eventually discover that the prices asked are too high and we lower prices with 20%. In this scenario, we assume that we start with 5 users using the standard service and 2 users using the premium service.

Hence, there is a dip in the beginning and after the change of price the product starts to get momentum and we start gaining a lot more customers. However, because of the slow start, the salary of the owners will be 1900 € in the first two years, and in the third year increase to 2300.

In this scenario, we expect a user growth of 20% for the standard subscription and none for the premium service in the first quarter.

After the correction, we assume the same growth rate as previously.

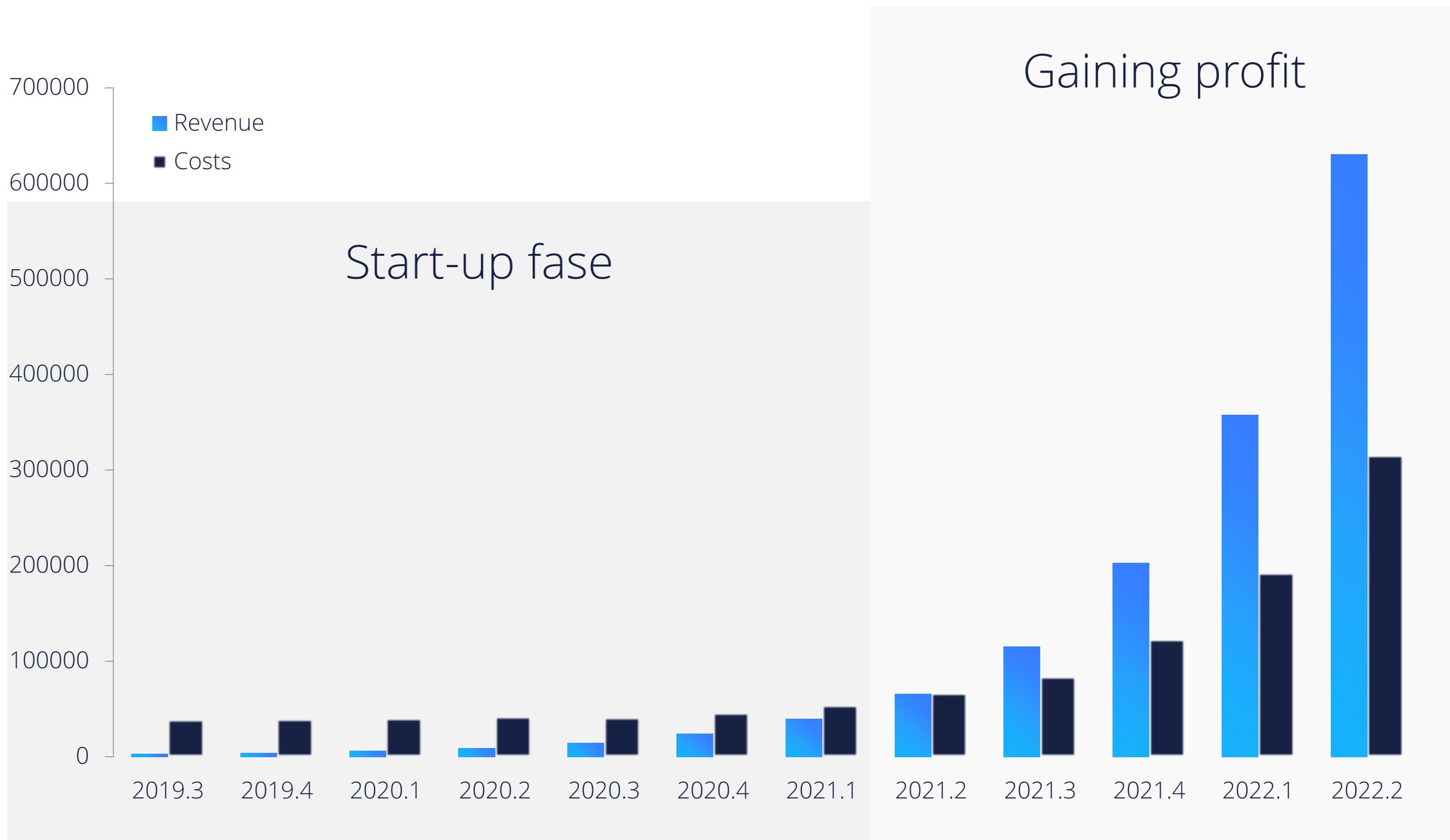


Financial plan – Higher Demand

Higher demand

In this scenario there is a higher demand for Buildinglife than expected. It seems that precision of the algorithm is not as important as expected allows us to grow fast and we be able to get a significant market share very quickly.

In this scenario, we assume a higher starting user base for both the standard and premium service, namely 15 and 8, respectively. Furthermore, we assume a user growth of 55% per quarter in the first year, 70% in the second year and 80% in the third for the standard service. For the premium service, we assume a user growth of 40% per quarter in the first year. For the second year, we assume a 55% growth rate. And in the third year, we assume a 65% growth rate.



Roadmap to launch

Hire Building Experts
To improve the prediction model Building experts are hired to create building material data by assessing a lot of available architectural documents and validate existing estimates building material data.



Tool Development

We will hire additional developers and data scientists and buy tools and services which improve development. The first focus is not improve our product in both a UI and prediction sense.

Pre-launch Marketing

BuildingLife is marketed among potential customers before the launch has taken place. We will get presentation spots and access on events and use LinkedIn marketing.



Pilot at de Alliantie

When the service has reached a more adult point, BuildingLife has reached an agreement to partner up with de Alliantie to pilot the service and get feedback on the service.



Launch BuildingLife

Funds are used to have a smooth launch day of BuildingLife. Our hosting partner can scale up quickly and we will use the funds to support this.



Our team members

Interesting Fact : Everyone can program

- Experienced in HTML & CSS
- Informatics master

- Computer science background
- Strong statistical knowledge
- MSc Computer science

- Background in information science
- MSc Business informatics

- Background in Business and ICT
- Practical orientation
- MSc Business informatics

Do you want to get in contact?

We want to change the construction sector by making circular potential transparent

Try it yourself!

Full website:

www.buildinglife.nl

Try estimation:

www.buildinglife.nl/try

Get in contact!

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