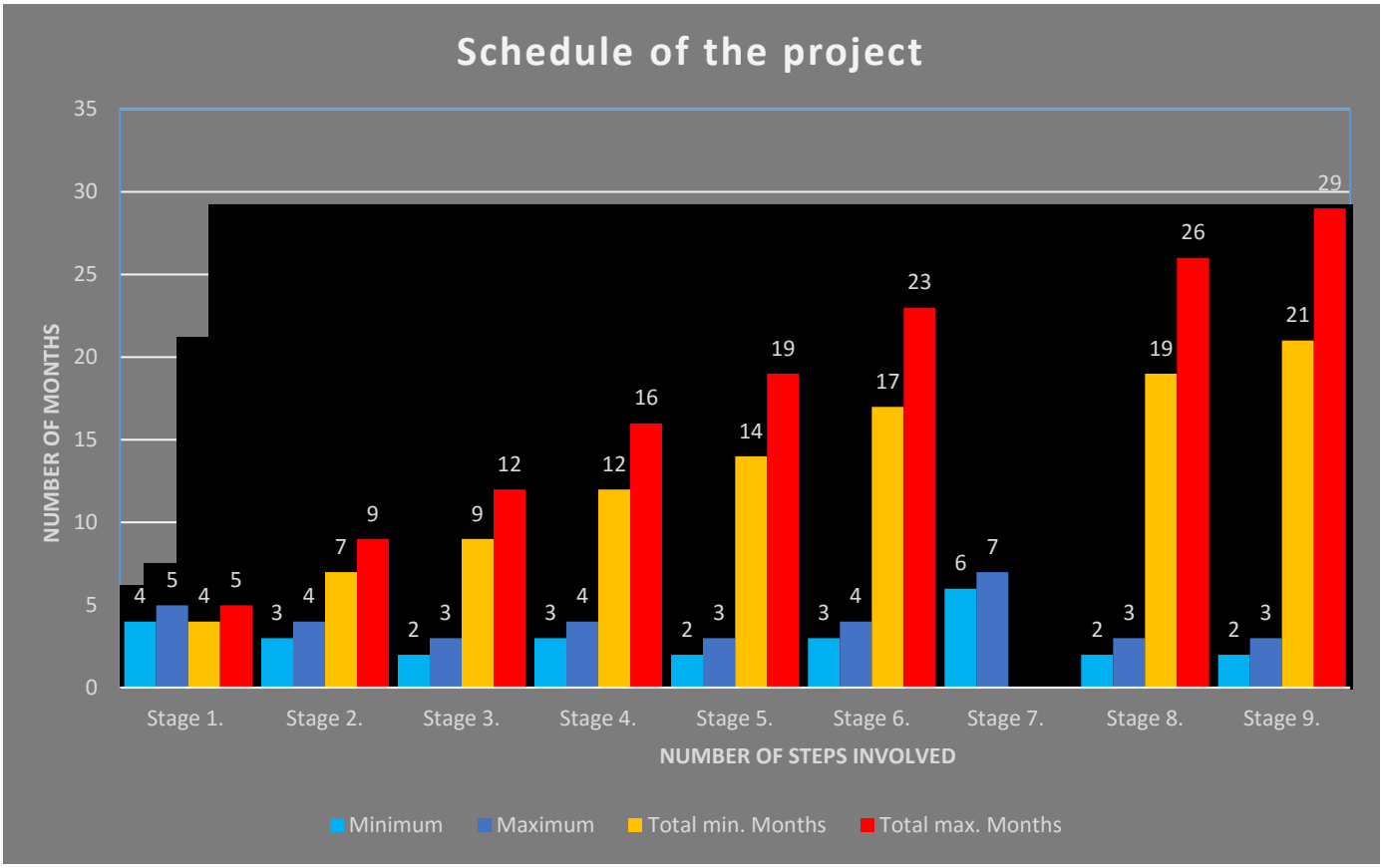
Technical and economic project justification

1. Summary of the project

Project	New Era Construction
Target	Create a building 3D printer (Codename "Havi")
Project creator	Grechka Volodymyr
Project Production and sales market	Building 3D Printers Market building equipment
Target audience	Construction companies
Technology	3D printing



Stage 1 To design and assemble the print head of printer
4-5 months

Stage 2 To design and assemble distributional slewing central part
3-4 months

Stage 3 To design and assemble foundation, rod post
2-3 months

Stage 4 To design and assemble lead switches
3-4 months

Stage 5 To design and assemble hydraulic and counterbalance system
2-3 months

Stage 6 To design and assemble concrete, plastic and metal delivery system
3-4 months

Stage 7 Software design and writing (made independent of the other stages)
6-7 months

Stage 8 Development of new type of concrete
2-3 months

Stage 9 Final assembling and first trial
2-3 months

Investments and returns

2. Market orientation project

On the market I write very briefly. Since the market is young and almost empty. But very perspective.	At the moment there is no products on the market meets the needs of large and medium-sized building firms.

Operational and technical advantages

Building 3D printer Havi		Any other printer	
Market Requirements	Yes	Market Requirements:	No
Saving materials	Yes	Saving materials	No
Print several materials	Yes	Printing multiple materials	No
Installation and start printing 3-6 hours		Installation and start printing	1-2 days
High-quality and reliable design elements	Yes	High-quality and reliable design elements	Unknown

3. Technology

Description of technology

3D printing - is to build on the real object created on a computer modeled 3D model. Then, a digital three-dimensional model is stored in the STL-file format, then the 3D printer, which displays the file for printing, forms the actual product.

Printing process itself - is a series of repetitive cycles associated with the creation of three-dimensional models, drawing on the desktop (elevator) printer consumables layer, moving the desktop down to the level of the finished layer and the removal of waste from the surface of the table.

Continuously cycles follow one after the other: the first layer of material is applied to the next elevator is lowered again and so on until the desktop will not finished product.

Description "Havi" 3D printing technology printer

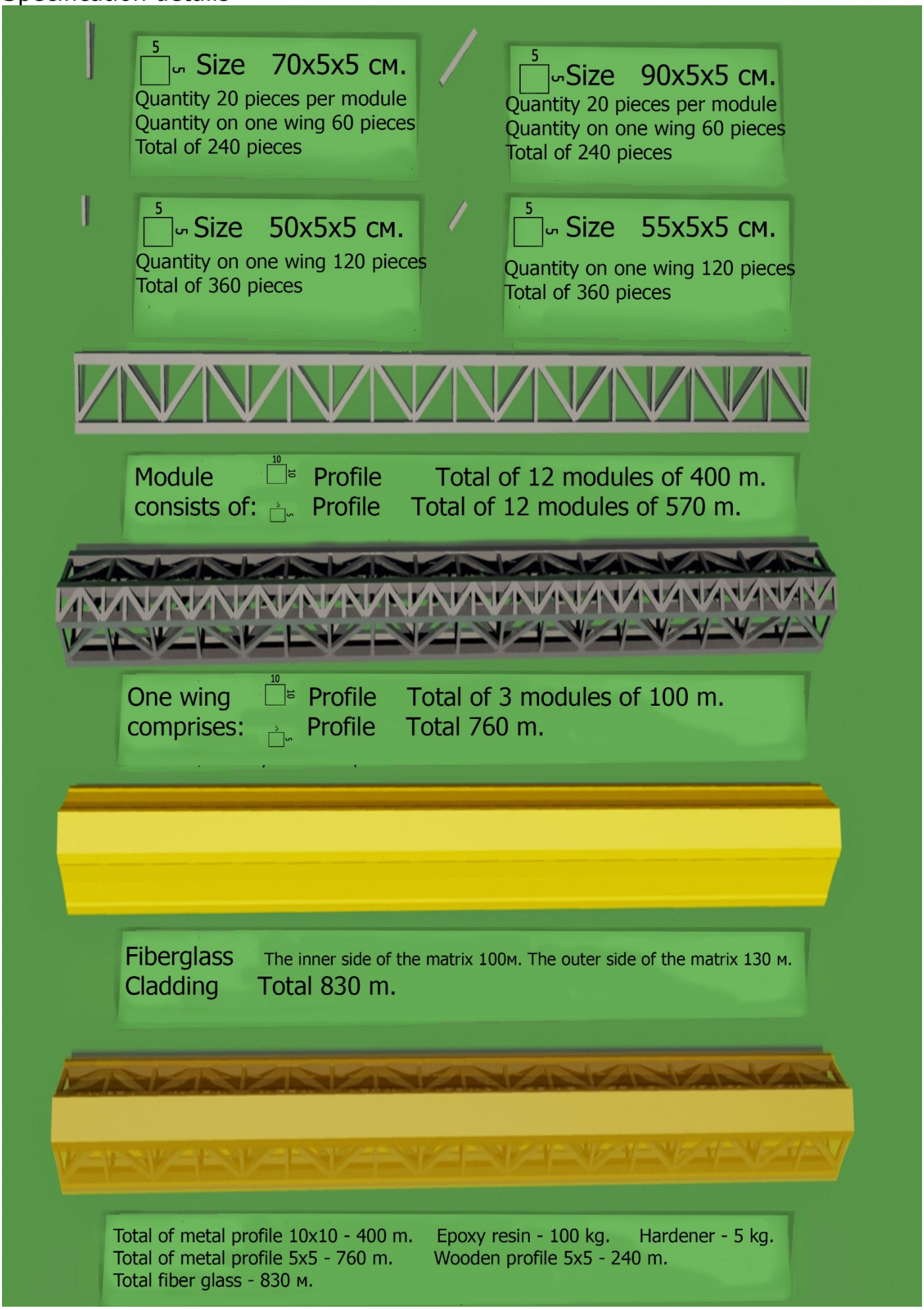
"Havi" uses the same layering overlay that most 3D printers.

The dry mix is poured into a mixer in which water is added, various plasticizers, additives and so on. Ready-mix by means of the pump is delivered to the print head of the printer. Also delivered to the printhead and other materials, such as:

- Metal dust printing of metal objects
- PVC granules for printing plastic parts

All kinds of materials can be printed simultaneously. Any 3D image can be converted into a clear format for "Havi" by means of special software

Specification details

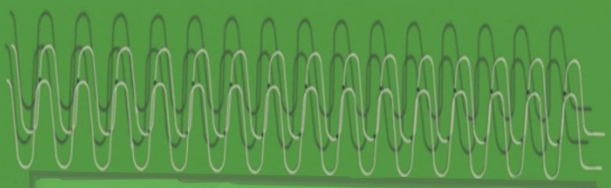


The hose for concrete supplying 32x48 70 bar (Alaska)
It should be on one wing all meters need
20 м. 80 м.

PVC hose 19x31 70 bar (Alaska)
It should be on one wing all meters need
20 м. 80 м.

Hoses for supplying metal dust, air and gas 13x25,5 70 bar (Alaska)
It should be on one wing all meters need
80 м. 320 м.

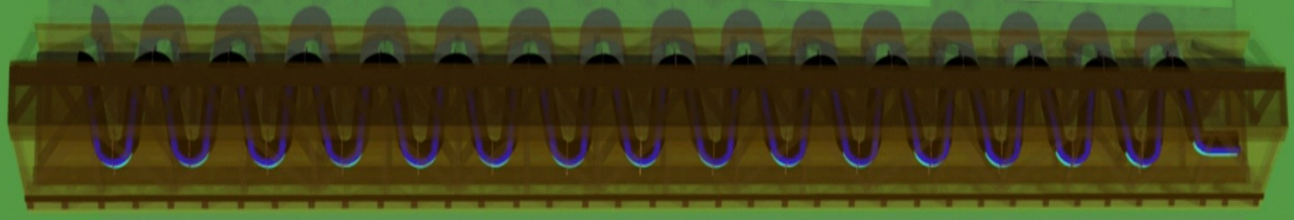
fasteners for
tensioning cable
one wing 80
all need 320



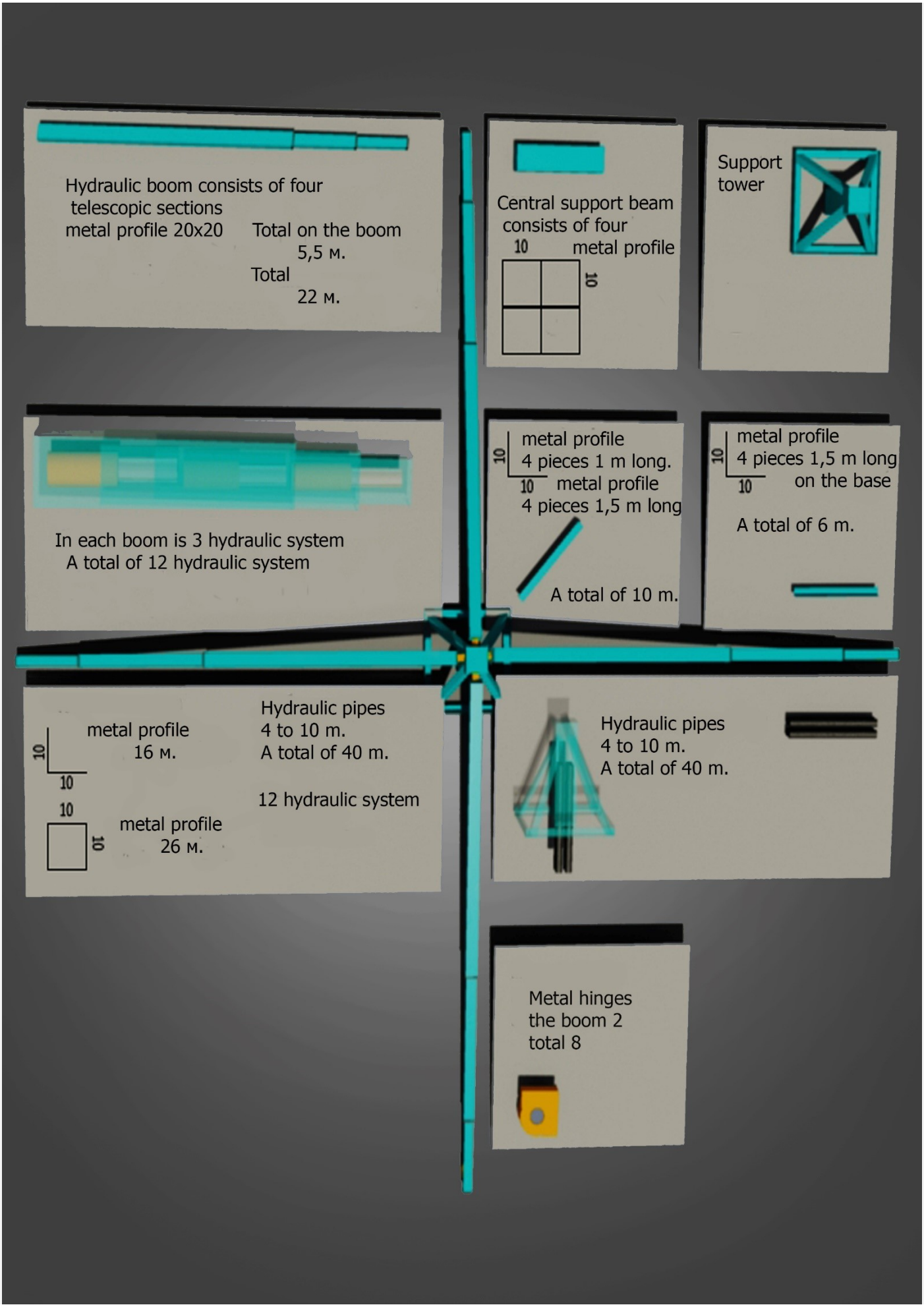
metal cable isolated 6x20 m.
It should be on one wing all meters need
80 м. 320 м.

Electric motor
one wing 2
all need 8

Rollers for cable
one wing 160
all need 640



The hose	Electric motor	Metal cable	Fasteners	Rollers
32x48 - 80 м. 19x31 - 80 м. 13x25,5 - 320 м.	x8	320 м.	320	640


Hydraulic boom consists of four
telescopic sections
metal profile 20x20
Total on the boom
5,5 м.
Total
22 м.
Central support beam
consists of four
10
metal profile
10
Support
tower
In each boom is 3 hydraulic system
A total of 12 hydraulic system
10
metal profile
4 pieces 1 m long.
10
metal profile
4 pieces 1,5 m long
A total of 10 m.
10
metal profile
4 pieces 1,5 m long
10
on the base
A total of 6 m.
10
metal profile
16 м.
10
10
metal profile
26 м.
10
Hydraulic pipes
4 to 10 m.
A total of 40 m.
12 hydraulic system
Hydraulic pipes
4 to 10 m.
A total of 40 m.
Metal hinges
the boom 2
total 8

The remaining elements of the design, I will not describe in detail, but simply list them. In order Projects security.
Rotating tower
The central junction box
The lifting platform
Central support
The mixing cistern
Printhead

4. Personnel Production

The first printer

A team of 7 people

- Project Manager
- Engineer 2
- 1 Electric
- 1 Hydraulics
- 1 Robotics
- 1 Welder

Mass production

-1 Production Manager

- 1 Head department of metal constructions

+ 16 workers

-1 Head department hydraulics

+ 8 workers

-1 Head department on the printhead assembly

+ 16 workers

-1 Head department Ordering of installation of elements

+ 8 workers

- 1 Head of Software

+ 4 workers

- 1 Head department final assembly

+20 workers

-1 Head department printer test

+ 6 workers

- Warehouse 4 workers

5. Project Management

Short description of the project

With design and build the world's first building 3D printers meets the needs of the building industry.

Managing under preparation	• Collecting the team and to to familiarize its members with the project. (Distribution of working hours, duties, and of salary) • Creating a phased project implementation plan. • Search and rent space to build the project. • Search for suppliers of materials and equipment. • Preliminary discussion with the software manufacturer (the stipulated time and price)
Management at the stage start	• Creating an office area in the rented premises (if not already there) • Purchase of office equipment, furniture and appliances. • Purchase of materials and equipment for the 1, 2 and 3 stages of creation. • Distribution of the work of all the team members. • Launch of the first stage of assembly
Management at the implementation stage	• An analysis of first stage of the the assembly and making changes in the further course of action. (If there are changes) • Launching the second phase of the assembly. • Analysis of the second phase of the assembly and making changes in the further course of action. (If there are changes) • Launch of the third phase of assembly • Analysis of the third stage of the assembly and making changes in the further course of action. (If there are changes) • Comparison of planning the timing and fulfillment • Comparison of cost planning and actual costs • The adoption of appropriate measures • Buying materials and equipment for 4, 5 and 6 stages. • Launch fourth stage • Analysis of the fourth stage of the assembly and making changes in the further course of action. (If there are changes) • Starting fifth stage • Analysis of fifth stage the assembly and making changes in the further course of action. (If there are changes) • Launch sixth stage • Analysis of the sixth stage of the assembly and making changes in the further course of action. (If there are changes) • Comparison of planning the timing and fulfillment • Comparison of cost planning and actual costs • The adoption of appropriate measures

Management at the implementation stage	• The seventh stage of the creation of software. • Buying of materials for the eighth stage. • Launch eighth assembly stage • Analysis of the eighth stage of the assembly and making changes in the further course of action. (If there are changes) • Opening of Sales and Marketing (hiring employees, the construction of additional office space, purchase of office equipment, etc.) • Launch ninth stage. • Search and test polegona rent. • Final inspection of all elimentov construction and test in real conditions.

6. Calculation of project costs

No.	Title	Amount per month	Total amount
1.	Opening of a company	-	$ 1000
2.	Salary	$ 9200	$ 193200-266800
3.	Leasing of premises	$ 2000	$ 42000-58000
4.	Cleaning of premises	$ 126	$ 1890-2646
5.	Office furniture	-	$ 5000
6.	Office equipment	-	$ 10200
7.	Software purchase	-	$ 100000
8.	Materials and equipment manufacturing	-	$ 220000
9.	Additional costs	-	$ 70000
		Total amount	**$ 643290-733646**

7. Investments and earnings of the investor

Investments. Or how I see the process.

As I see it. On the creation of a building 3d printer "Havi" I need $ 643290-733646. The difference between the sums equal to the amount spent months creating printer 21-29. I hope to receive the sum of $ 733,646 and a term of 29 months. Since I'm one of those people who do not like when they have something pressing, be it time or financial constraints. I love working lingered but surely, steadily and efficiently.

As I want to be an investment. In Idel I would get the entire amount at once. I explain for what. All the basic parts "Havi" building 3D printer developed. And for those items in the constructions of which I am sure can order materials in advance in order to speed up the processes of creation.

You can also are risen and this option. Dividing the total amount of investment into three parts.

733646 = 300000 + 250000 + 183646

1 Part 2 Part 3 Part

1 Part 1 - 10 month 2 Part 11-20 month 3 Part 29 -21 month

I also always open to dialogue on any one of the document.

Expected profit of the investor

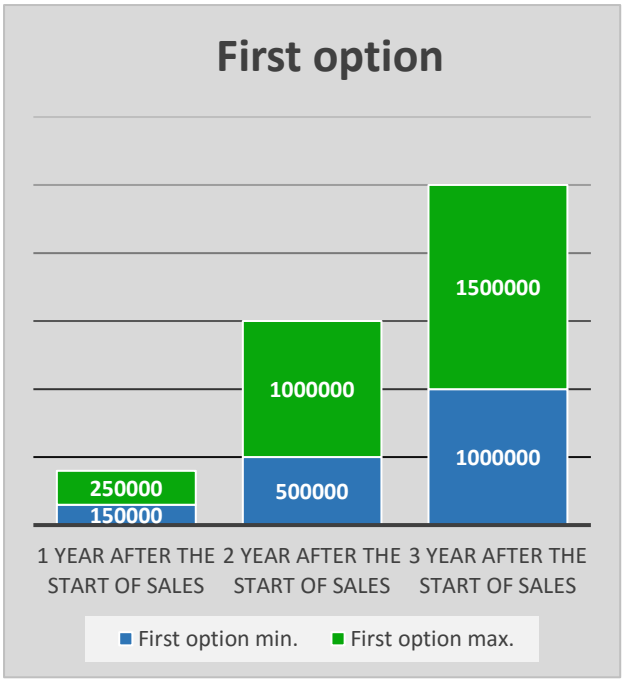
First option

- Percentage of sales of building 3D printers "Havi"
- On the basis of drawing up the contract. The investor will receive 10% of sales. (Both parties participate in the drafting of the contract)
- The preceding basic evaluation of sales
- 1 year sales
- The number of printers3-5. The total amount of 1500000 - 2500000 $
- Profits ivestor 150,000 - $ 250,000
- 2-year sales
- The number of printers 10-20. The total amount of 5000000 - 1000000 $
- Profits ivestor 500,000 - $ 1,000,000
- 3-year sales
- The number of printers 20-30. The total amount of
- 10000000 - 15000000 $
- Profits Investor 1000000 - 1500000 $
- The total profit of the investor for the first three years from the beginning of sales of
- min. 1650000 max. 2750000 $

The second option

- The percentage of the total profit New Era Construction
- On the basis of drawing up the contract. The investor will receive 7% of the total profit New Era Construction. (Both parties participate in the drafting of the contract)
- Since the first sales New Era Construction will spend all their profits to expand production.
- An additional production and firms are part of the New Era Construction

- Such as :
- Production shop for modular buildings (using building 3D printers "Havi" will be printed finished dwelling modules of which will be built private houses)
- New Era Buildig will buy the land, and to them with the help of a 3D printer, "Havi" to build a dwelling complex for sale.
- Preliminary assessment of profit
- 1 year sales
- Net income from Havi sales with a deduction salaries and material costs 420,000 - $ 820,000
- The cost of the expansion of production of 420,000 - 820,000 $
- Profits investor 0



2-year sales

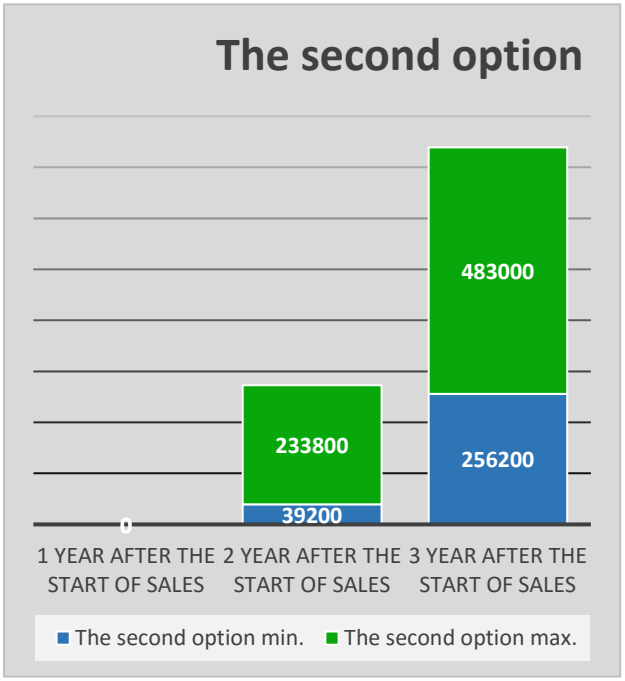
Net income from Havi sales with a deduction salaries and material costs 2020000 - 4520000 $

Net profit from the shops on manufacture of modular homes with net salaries and material costs 400,000 - $ 600,000

Net income from New Era Building with net salaries and the cost of materials 140,000 - $ 220,000

The amount of profit 2560000 - 5340000 $ Costs for extension of production of $ 2000000

Profits investor 39200 - $ 233800



3-year sales

Net income from Havi sales with a deduction salaries and material costs 3920000 - 6420000 $

Net profit from the shops on manufacture of modular homes with net salaries and material costs 600,000 - $ 1,200,000

Net income from New Era Building with net salaries and the cost of materials 140,000 - $ 280,000

The amount of profit 4660000 - 7900000 $ Costs for the expansion of production $ 1000000

Profits investor 256200 - 483000 $

Although the second option seems to be less profitable and in fact over the years it will bring in two or even three times more profit to the investor. Since the New Era Construction is not going to stop covering new and new markets.

8. Risks and prevention

Naturally creating a new product is not a hundred percent guarantee that everything will go per plan. At any stage of the design and creation may be unforeseen problems. But that's why, in my plan a lot of time is given to the analyst of what is happening. Before starting, run-time and after the completion of each stage will be complete analytics, and changes. In order to get ahead of the appearance of possible problems.

I almost did not write something about themselves sales. To be honest, there are some thoughts about it. But now I'm more concerned about the process of creating itself. And about sales, I do not feel any fear or because all my heart I believe in the uniqueness of their product. Excuse me for my simplicity, but Havi on so much good will that orders for years to come. In this I am 100%

9. Conclusions and additions

New Era Construction project on so much good that it is worth to invest in it. Let it not one of those startups that bring profits in the first year. But he will bring millions in revenue after sales began. And the situation on the market so favorable that it is worth the risk. After all, the main enemy for me now is the "time."

Already, many companies are developing its construction 3D printers. And the product will meet the requirements of building firms, for a long time will take a leading position in the market. I believe that my "Havi" is exactly where needed construction companies and future developments of mankind.

I also want to add that New Era Construction plans to build at his own expense five children's homes for orphans for the first ten years since the start of sales.