PUBLIC UNIVERSITY OF NAVARRE
SCHOOL OF AGRICULTURAL ENGINEERING

CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

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June 2017

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UNDERGRADUATE FINAL PROJECT

Realized and presented by BORJA SESMA TELLERIA

My deepest gratitude to Alberto, director of this project and María Jesús, codirector, for your selfless help.

ABSTRACT

Work experience is key to personal development. In the case of people with disabilities, both physical and intellectual, work plays a vitally important role in their social inclusion.

The Undergraduate Project entitled " Central kitchen design as a special employment center", seeks to capture the technical and social training acquired during the degree. For this reason, a technical project is realized to design a central kitchen for collectivities with a maximum capacity of 4,000 daily menus.

The company is designed with the aim of providing work to people with disabilities, both physical and intellectual. As a Special Employment Center, at least 70% of employees must be people with different skills. It explains the reasons why a center with these features is created and describes the jobs in the kitchen and the characteristics of each of them.

Key words: Special employment center, disability, central kitchen, catering

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REPORT

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TABLE OF CONTENTS: REPORT

1 OBJECT

1.1 OBJECT

This project aims at the design of an industrial kitchen as Special Employment Center (SEC). It covers the entire technical process, starting from the reception of raw materials to the expedition of prepared food. It also describes the management of employees, which in this case corresponds to people with disabilities, so the project acquires a social character.

The kitchen will fulfill the regulations applicable to the scope of the project, it will have the necessary equipment and facilities so that, together with good management, an economic benefit will be obtained.

1.2 JUSTIFICATION

Work experience is key to personal development. In the case of people with disabilities, both physical and intellectual, job plays a vital role in their social inclusion. There are few places where this group can develop their working life.

For this reason, and in order to carry out a social activity that generates economic profit, a central kitchen is designed as a special employment center.

1.3 LOCATION

The project will not have a real location. One of the objectives of it is to dimension the space needed for the implementation of an industrial kitchen. For this reason, the design will not be based on an existing parcel.

2 SCOPE

This project will describe the design of the distribution and management of the kitchen as a special employment center. It considers not only a technical design of the facility, but also the management of the main group of individuals who will work in the company, people with disabilities.

Therefore, it covers the selection of equipment, the design of the distribution and facings of the kitchen. The design of the outer structure of the warehouse will not go beyond a brief estimate of its appearance, it will not calculate the structure nor installations.

In relation to the management of the special employment center, several topics are developed: conditions of being a SEC, the specific staff for this company and what subsidies exist.

3 BACKGOUND

After conducting a study of the special employment centers in Navarre, none of them are entirely devoted to restoration. It is true that there are several central kitchens of this size in the community, but none has a staff in which the majority of workers are people with disabilities. Given this perception, it can be affirmed that there are no antecedents in Navarre.

In addition, this Undergraduate project entitled "Central kitchen design as a Special Employment Center", has been drafted with the objective of being able to pass the curse

501890-Trabajo Fin de Grado, and thus obtain the title of Graduate in Agro-food and Rural Environment Engineering.

Any final Undergraduate Projects was found in the repository of the Public University of Navarre, which aimed to design a central kitchen. So there is not any previous project of an agri-food industry for people with disabilities.

4 STANDARDS AND REFERENCES

4.1 LEGAL PROVISIONS AND APPLIED RULES

4.1.1 CONCERNING THE KITCHEN DESIGN

Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs.

Royal Decree 202/2000, of February 11, establishing the rules relating to food handlers.

Royal Decree 237/2000 of 18 February, which establishes the technical specifications to be met by special vehicles for the inland transport of special vehicles for the inland transport of food products at regulated temperature and procedures for conformity control With specifications.

Royal Decree 314/2006 of 17 March, approving the technical code of the building.

Royal Decree 397/1990, of 27 March, approving the general conditions of materials, for food use, other than polymeric.

Royal Decree 486/1997, of April 14, which establishes the minimum safety and health provisions in the workplace.

Royal Decree 865/2003, of July 4, which establishes the hygienic-sanitary criteria for the prevention and control of legionellosis.

Royal Decree 866/2008, of 23 May, approving the list of substances allowed for the manufacture of materials and plastic objects intended to come into contact with food.

Royal Decree 891/2006, of 21 July, approving the technical and sanitary standards applicable to ceramic objects for food use.

Royal Decree 1334/1999, of July 31, which approves the general rule of labeling, presentation and advertising of foodstuffs.

Royal Decree 1420/2006, of 1 December, on the prevention of anisakis parasitosis in fishery products supplied by establishments serving food to final consumers or communities.

Regulation 1935/2004 of materials and articles intended to come into contact with food.

Royal Decree 2483/1986, of November 14, approving the Technical-Sanitary Regulation on general ground transportation conditions for food and food products at regulated temperature.

Royal Decree 3484/2000, of 29 December, laying down hygiene standards for the preparation, distribution and trade of prepared foods.

ISO 9001: 2000 Quality management systems. Requirements.

4.1.2 CONCERNING THE DESIGN OF THE SEC

Law 13/1982, of 7 April, on the social integration of disabled people (LISMI).

Royal Decree 469/2006, of 21 April, regulating the support units for professional activity within the framework of the personal and social adjustment services of the Special Employment Centers.

Royal Decree 1971/1999, of December 23, of procedure for the recognition, declaration and qualification of the degree of handicap.

Royal Legislative Decree 1/2013, of 29 November, approving the Consolidated Text of the General Law on the rights of persons with disabilities and their social inclusion.

4.1.3 CONCERNING THE DRAFTING OF THE PROJECT

UNE 157001: 2014, General criteria for the formal preparation of the documents constituting a technical project.

4.2 SOFTWARES

The following softwares have been used in order to develop this project:

- AutoCAD 2017®
- Microsoft Excel 2016®
- Microsoft Word 2016®

4.3 QUALITY CONTROL PLAN

Quality control is the tool that allows to measure the degree of exigency of the product and the process. Every tool developed within this annex have common objectives that are detailed below.

- Comply with the requirements of the UNE-EN ISO 9001:2000 standard, concerning quality management systems.
- Meeting or exceeding customer expectations.
- Recording data for continuous improvement.
- Reducing risk of contamination as far as possible to ensure food safety.

Annex 6, Quality Control defines the tools to be implemented in the process to perform a good quality management.

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5 DEFINITIONS AND ABBREVIATIONS

5.1 DEFINITIONS

Facing wall: Corresponds to the coverings of the elements of construction of the kitchen equivalent to floors, perimeter walls, interior partitions and ceilings.

Forward flow: It is a logical sequence of work by which food goes from its most contaminated stage to its consumption without going back to an earlier stage, so that no contamination occurs during preparation and handling.

Furniture: Term that includes all objects used as a deposit, support or support during the development of the activities of the kitchen.

Installation: Generically it is everything placed or located that needs to be used permanently or circumstantially to develop the activities of the kitchen.

Kitchen: It is defined as the space of the establishment of restoration destined to carry out the elaboration of the meals by means of the transformation of foods.

Machine: Any installation equipped with mechanisms or devices that base its operation on a non-manual supply of energy, usually electric or gas, used for the development of the activities of the kitchen.

Occupational center: A place whose ultimate aim is to ensure the integration of adults with intellectual disabilities by carrying out work, personal and social activities for the development of their autonomy, social training and work qualification.

Plonge: Place where the kitchen battery is cleaned and stored.

Site: It is referred to the space or place of a kitchen to which its peculiarities or the intended use make it specific and differentiated within a zone. That is, a site is a part of a zone.

Special Employment Center: Companies whose main objective is to provide workers with disabilities productive and remunerated work, appropriate to their personal characteristics and to facilitate the labor integration of employees in the ordinary labor market.

Utensil: Any of the appliances for manual use, regardless of whether they are single use or multipurpose, used during the process of processing, transport or service of meals.

Zone: It corresponds to each of the spaces destined to carry out the different habitual activities of the kitchen.

5.2 ABBREVIATIONS

ADL: Activities of Daily Life

AGT: Assessment and Guidance Teams

CIF: International Classification of Functioning, Disability and Health

GMP: Good Manufacturing Practices

OC: Occupational Center

SAQ: Spanish Association of Quality

SEC: Special Employment Center

SROI: Social Return On Investment

SU: Support Unit

UP: Undergraduate Project

WHO: World Health Organization

6 DESIGN REQUIREMENTS

First of all, the fundamental requirement when dealing with a social project is that in all decisions, during the design process and the subsequent management of the center, priority should be given to the user group of the kitchen, people with disabilities.

It must be taken into account that a central kitchen is a food industry, consequently, the adaptation of the equipment and processes is practically impossible. However, small design measures can be adopted to facilitate the task for workers:

- The equipment should provide easy-to-understand monitors.
- Those machines, in which tilting is possible, will have priority over fixed ones.
- The social area (changing rooms, offices, rest room and toilets) should be easily accessible for people with physical disabilities.
- Stairs and double floors will be avoided throughout the facility accessible by employees. This requirement is not applicable for double plants for machinery.
- It will include a rest room with a small kitchen to be able to make stop in the day.

Secondly, the design must be such that if in the future it is decided to carry out an extension of the premises, it can be produced without problem.

The forward flow must be guaranteed with the design of the installation. Therefore, all areas of the kitchen should follow a logical order, consistent with the production process.

The machines chosen, as far as possible, will be from a single manufacturer, with the aim of unifying the maintenance service.

The entrance of people must not be placed in the same front that the entrance and exit of vehicles, to reduce the risk of accident.

The loading and unloading of materials must be able to be done inside the kitchen property, therefore sufficient space will be left for traffic of vehicles.

It will not be necessary to make a selection or location of the plot since the project will not be executed. For this reason no previous soil and climatic studies will be carried out.

The project should contain a description and analysis of the special employment centers in Navarra, with the aim of placing the scope of this document.

The management of the kitchen will be described and a product marketing plan will be carried out, analyzing the competences of the sector and the advantages with which the company can count.

7 SOLUTIONS ANALYSIS

During the kitchen approach, decisions have been taken in two main areas: the technical design of the kitchen and the development of the management of the organization as SEC.

7.1 KITCHEN TECHNICAL SOLUTIONS

On the one hand, regarding engineering thinking, several elements admitted different solutions, the most important were the following.

7.1.1 BUILDING GATES

The first variant appeared when designing the inputs and outputs of materials, products, people and waste. The requirements indicate that the doors of people and the doors of trucks must be in two different fronts. Consequently, at least two sides of the building need entrance, nevertheless, it was possible that three or even the four fronts of the warehouse had a door.

Finally it is decided that only two fronts contain gates, in order to reduce the urbanization space. The presence of an opening in the building involves leaving a space, sufficient for the transit of vehicles. For that reason, the personnel door is placed in the front near the entrance of the plot. On the right lateral front all the other entrances and exits that imply traffic of vehicles are located.

This measure implies that individuals will not with transportation vehicles, reducing the risk of accident.

7.1.2 LOADING DOCKS

When facing the doubt of incorporating loading docks for trucks and vans in the installation, an analysis was made based on the requirements of the project. This measure involves the placement of loading and unloading docks at the height of a truck's trailer. This means that the interior floor of the kitchen should be raised to thar level. As a consequence it is necessary to build stairs and access ramps.

As one of the requirements corresponds to the easy accessibility for people with disabilities, avoiding steps, it is decided not to place loading docks and build gates with dimensions of loading vans.

7.1.3 CHOICE OF MACHINERY

Another possibility has to do with the choice of equipment. The project requirements indicate that, whenever possible, they will be chosen from the same manufacturer to unify the maintenance system. Starting from this point, it was possible to adopt teams of well-known brands, but with a higher price, or on the contrary to contract less well-known brands, of lower quality and lower price.

Finally the brand AngeloPo is chosen, a brand that is very present in industrial kitchens, with a well-known name and reliable from the point of view of quality. Thus, even if the initial investment is high, in the long run it will have a lower expenditure on repairs and a higher satisfaction of workers.

7.2 SPECIAL EMPLOYMENT CENTR SOLUTIONS

On the other hand, regarding the management solutions of the organization as a special employment center, an analysis of the following ideas is realized to make decisions cooherent with the aim of the project.

7.2.1 EMPLOYEES CHARACTERISTICS

First, the characteristics of the employees had to be selected. Within the world of disability, there are thousands of variables. As discussed in *Annex 9. Special Employment Center,* this group can be classified in many ways. One of those, is to distinguish between physical and intellectual, among others disablisities.

Two options were contemplated: only having people with different physical abilities, or also incorporating people with intellectual disabilities. At the end, and due to the social character of this project, it was decided to include both discapacities in the staff. Accepting a more complicated challenge, but with greater influence in society.

7.2.2 EMPLOYEES RECRUITMENT

Secondly, it was necessary to decide how to manage recruitment. At the beginning, the idea was awarding a maximum degree of discapacity to each job. However, this option was discarded, because, for example, a person who lacks a leg, with a disability grade of 65%, could be more suitable for certain tasks than another individual with intellectual differences, and a degree Of 50%. For this reason the selected choice is to distinguish between physical and intellectual disabilities only.

7.2.3 UNITS OF SUPPORT RATIO

Another aspect to consider was the ratio of Units of Support (US) in the kitchen. The legislation marks 1 SU for every 12 workers of an SEC. This center, due to its characteristics and to the fact that the product is food, requires greater supervision by the monitors. Therefore it is decided to reduce the ratio to 1: 6 to ensure greater control and assistance to people with disabilities.

Two alternatives are considered. The first one is that the Support Units are dedicated only to supervise. In the other one, the monitores are also responsible for carrying out the tasks. Finally, due to the low number of employees, the second option was decreed.

8 FINAL RESULT

The final result that determines the design of the central kitchen as a special employment center is detailed in this section. Firstly, the technical aspects of the project will be explained. Then the social character of the project will be developed, clarifying the management as a special employment center.

8.1 DEFINITION OF THE ACTIVITY

The activity developed in the kitchen will be the preparation of meals for collectivities as schools, companies, residences ... The process encompasses from the reception of the raw materials to the expedition for consumption in the destination centers. In addition the activity has a social component, since the majority of its workers will be people with disabilities.

There are two types of culinary techniques possible in catering services: Hot line and cold line.

In the hot line the menu is daily served in the destination center prepared for consumption. This process tries to avoid the food decreasing of temperature after the cooking. To do this, once the heat treatment is finished, every meal is immediately packed in isothermal containers and distributed in isothermal vehicles.

This ensures that after three or four hours on average the menus can remain in the closed containers, the temperature at the time of opening is above 65°C, levels that prevent the growth and proliferation of microorganisms that could cause contamination of food.

The cold line consists of cooking followed by a rapid temperature chilling, rationing and cold chain transport and distribution (<3 °C). The food is regenerated minutes before the service at the point of consumption. Its base is the guarantee of microbiological control and food safety.

The technique used, mostly corresponds to the hot line, it is true that the cold line will be used for individual diets delivered in trays closed by heat sealing.

8.2 PROCESS TECHNOLOGY

The flow diagram of the process is described below, each stage is described in detail in *Annex 1. Production process.*

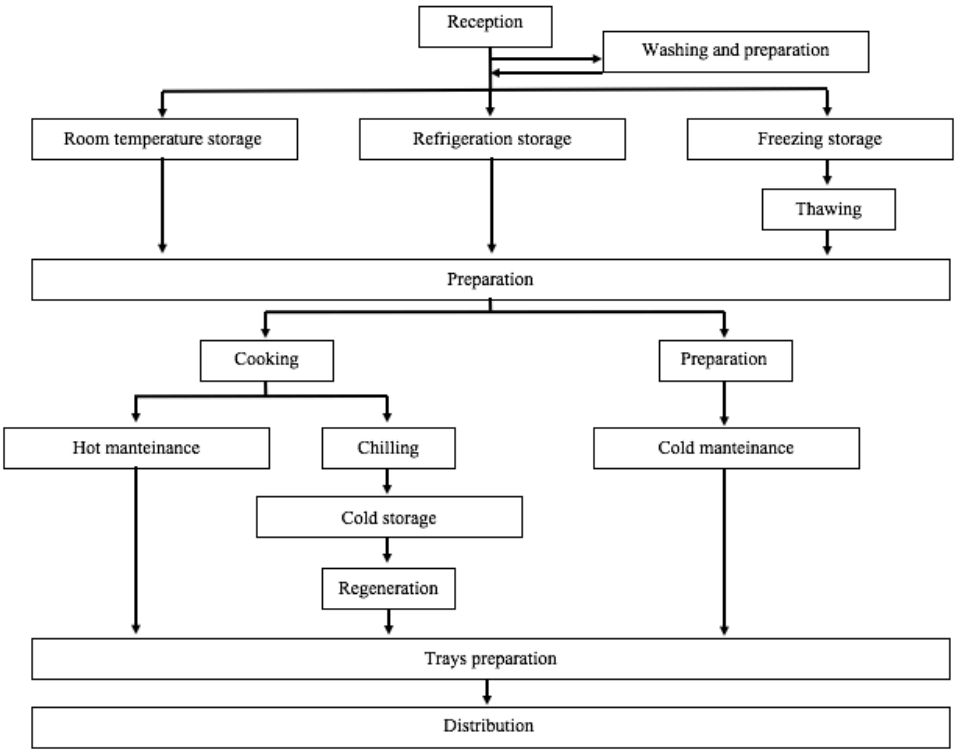

Figure 1 Flow chart of the process

8.3 PROCESS ENGINEERING

Depending on the food to be prepared, the machinery used will vary considerably, so it is not possible to unify all the processes in a representative diagram. The machinery flow chart of a meal consisting on borage with potatoes is included as an example.

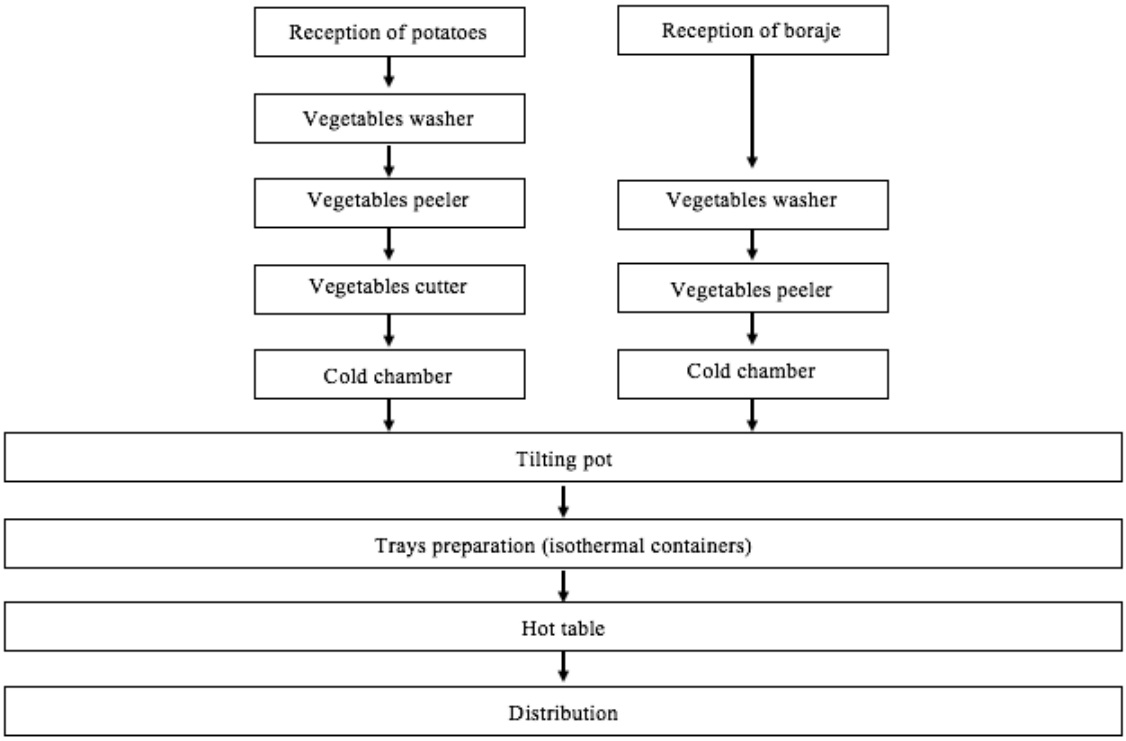

Figure 2 Machinery flow chart of a meal of borage with potatoes

Annex 3. Machinery, describes in detail the characteristics of each of the machines designed for this kitchen.

8.4 FLOOR LAYOUT

The design of the kitchen has been made following logical steps coherent with the fundamentals discussed in *Annex 4. Floor layout*. Firstly, the space requirements are calculated, then the flows to be followed by staff, food and wastes are outlined, finally the spaces are adjusted.

8.4.1 SPACE NECESSITY

Firstly, the space requirements of each kitchen area are calculated from an average surface calculated from several references. This dimensioning will not be the final one, it is an orientation to which we must try to adjust the final measures. Due to the organization of spaces, the final surfaces will be similar but not identical to those calculated below. These areas are shown in the following table.

Table 1 Calculation of required surfaces

Zone	Surface (m^2/menú)	Total surface (m^2)
Reception of raw materials	0,010	40
Empty packaging room	0,003	12
Waste room	0,007	28
Warehouse major office	-	10
Total reception zone	**0,020**	**90**
Antechambers	0,010	40
Cold chamber for meat	0,002	8
Cold chamber for dairy products	0,001	4
Cold chamber for vegetables and fruits	0,004	16
Freezer and chanber for fish	0,002	8
Other cold chamber	0,001	4
Total cold storage	**0,020**	**80**
Total storage at mid temperature	**0,005**	**20**
Cold room for vegetables	0,006	24
Cold room for meat and fish	0,010	40
Main kitchen	0,020	90
Cold Kitchen	0,005	20
Plonge	0,009	36
Kitchen boss office	-	12
Total preparation zone and kitchen	**0,230**	**222**
Cleaning room	**0,017**	**68**
Deliver space for prepared food	**0,010**	**40**
Locker rooms and toilets	**0,030**	**120**
TOTAL	**0,332**	**1350**

8.4.2 FLOW DESING

First, the inputs and outputs of each flow present in the kitchen are located.

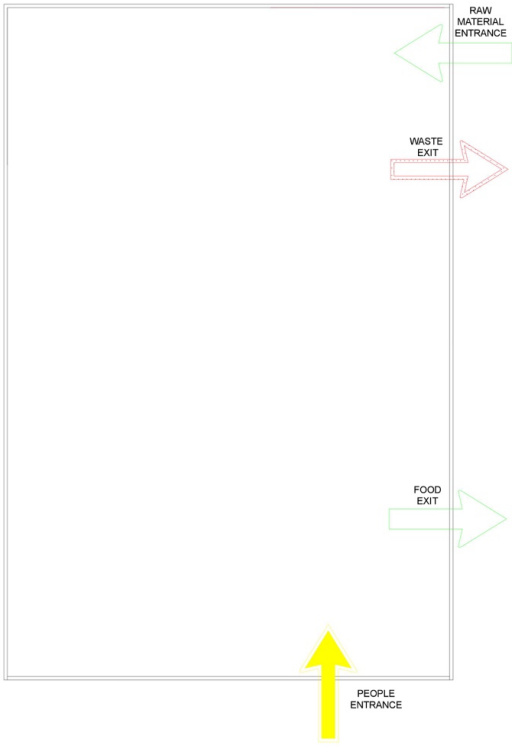

Figure 3 Entrances and exits

Then the main areas of the kitchen are set. These are: Warehouse, kitchen, social area, where offices and dressing rooms are located, and waste zone.

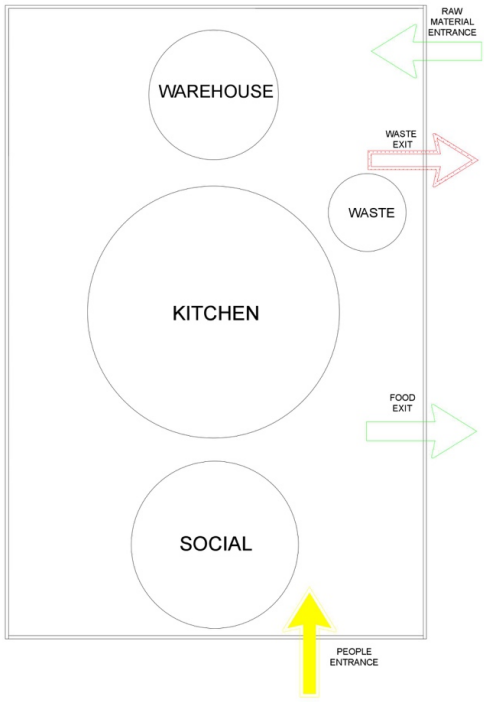

Figure 4 Main kitchen areas

Next, the flows between the zones are located.

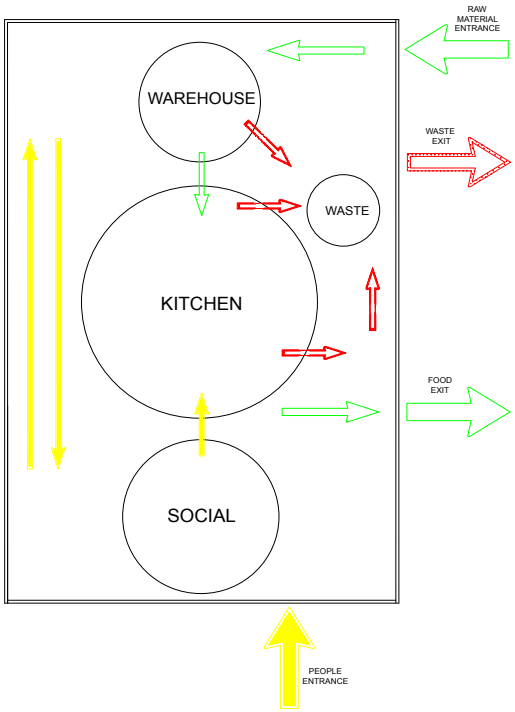

Figure 5 Flows between areas

8.4.3 FINAL DISTRIBUTION

Finally and trying to adjust the surfaces to those calculated above, all the areas and locations in the kitchen are located. The flow shown in figure 5 must be always fulfilled. The distribution of the sites, machines and utensils is also carried out, this information is shown in *Drawing 2. Distribution drawing.*

Figure 6 Final layout and flows

Final surfaces are similar to those calculated, but not identical, due to the fit of spaces. In addition some areas not present in the initial calculation were added for convenience of the installation. Therefore, the final extension of each zone is indicated.

Table 2 Final surfaces

Zone	**Surface (m^2)**
Unload area	15,00
Reception of raw materials	26,62
Empty packaging room	10,22
Vegetables washing room	20,32
Waste room	27,78
Archive office	10,29
Antechamber	40
Cold chamber for meat	9,00
Cold chamber for dairy and others	9,09
Cold chamber for vegetables and fruits	14,42
Cold chamber for fish	7,87
Freezer vegetables	14,42
Freezer other food	9,00
Thawing	6,03
Dry food warehouse	21,19
Cold room for vegetables	22,57
Cold room for meat	22,69
Cold room for fish	22,98
Main kitchen	95,60
Cold Kitchen	21,25
Special diet kitchen	15,79
Plonge	35,90
Carts and trays cleaning area	65,11
Individual packaging area	19,70
Collective packing area	41,60
Deliver prepared food	14,08
Rest zone	21,19
Cleaning room	3,47
Male locker room	54,83
Female locker room	54,83
Support Units office	13.05
Toilets	5,54
Warehouse major office	12,69
Kitchen boss office	17,03
Meeting room	16,32
Total surface area	**961,44**
Total built area	**1.062,54**

8.4.4 URBANIZATION

To the total surface of the industrial building, the necessary space for the urbanization will be added. All in all, a space of 2.515,80 m^2 will be needed for the construction of the kitchen, 1.062,54 m^2 of them will be the building.

Surrounding the warehouse will be placed a pavement suitable for the transit of vehicles. Within the plot 5 parking spaces will be placed, of which 2 will be for people with reduced mobility. There will also be access roads and enough space for the maneuvering and transit of vehicles. The plot will have a single access for vehicles, a door 5m wide.

Around the plot will be placed a wall and attached to it, a perimeter garden 1m wide, which in the same way will be present in the front of staff entrance.

The distribution of urbanization is reflected in *Drawing 1. General drawing*.

8.5 HAZARD ANALYSIS AND CRITICAL CONTROL POINTS

The design of anY agro-food industry should always be linked to a Hazard Analysis and Critical Control Points (HACCP), this is the preventive system of food safety management that applies to the entire food chain, from primary production to distribution Retailer.

8.5.1 HACCP TEAM

The implementation of any system requires a team responsible for it. This group will be formed by employees of the center in contact with the kitchen, cleaning processes, handling processes... The team is formed as follows::

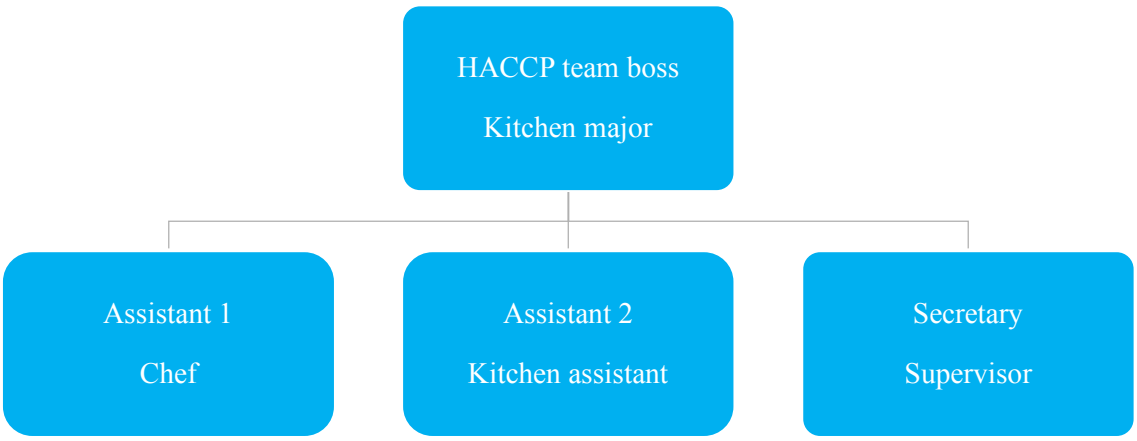

Figure 7 HACCP team chart

8.5.2 RISK PREVENTION PLANS

In order for the system to be effective it is necessary to carry out the following prevention plans:

- Good agricultural practices
- Training plan for workers (food handlers)
- Approved supplier control plan
- Hygiene plan (cleaning and disinfection)
- Water control plan

- Plan of pest control
- Equipment maintenance and calibration plan
- Traceability plan
- Good handling practice plan
- Waste Management Plan
- Transportation control plan

8.5.2 PROCESS ANALYSIS

The analysis of the process is described in *Annex 7. Hazard Analysis and Critical Control Points*, describes in detail the flow chart information, process description, step analysis, critical limits, monitoring and verification measures quality.

8.6 MANAGEMENT OF THE SPECIAL EMPLOYMENT CENTER

This project would not make sense without a social focus. The employees of the special employment center, people with disabilities, are the main characters in this scenario. For this reason the reading of this document should, without exception, should contemplate the *Annex 9. Special Employment Center*, which, among others, defines the classification of disabilities, performs an analysis of people with disabilities in Navarre, and explains in depth the information summarized below.

This section will only develop what is a special employment center, an analysis of the social return of public investment and how the employee team is managed.

8.6.1 DEFINITION OF A SPECIAL EMPLOYMENT CENTER

A special employment center is a company in which at least 70% of the workforce are people with disabilities. The workers have the same working conditions as in a standardized company, for instance, they have to fulfil the same amount of labor hours and they have a salary never lower than the legislated minimum wage.

The requirements for the creation of an SEC are defined below:

- At least 70% of the Special Employment Center staff must be made up of persons with a disability degree equal or superior to 33%.
- Its main purpose should be to ensure paid work for employees, as well as facilitate their insertion in the ordinary labor market.
- From the mercantile point of view, the Special Employment Centers are considered companies.
- They must have the corresponding Personal and Social Adjustment Services, which support the workers in the process of adaptation to the job, in the evolution of their professional development and in the consolidation of the same.
- Due respect and consideration for employees with disabilities.
- Protection of their personal and professional dignity.
- Likeness in the organization and working methods, compared to the ordinary company, if the personal and professional conditions of the employees allow it, to favor the transit to other standard companies.

- Special relevance in the application of current legislation on health and safety at work.

8.6.2 SOCIAL RETURN ON INVESTMENT

There are many reasons to create an SEC. Not only social causes, also business and economic ones. This section explains how a SEC positively returns the investment that the Public Administration performs in the form, for example, of a subsidy.

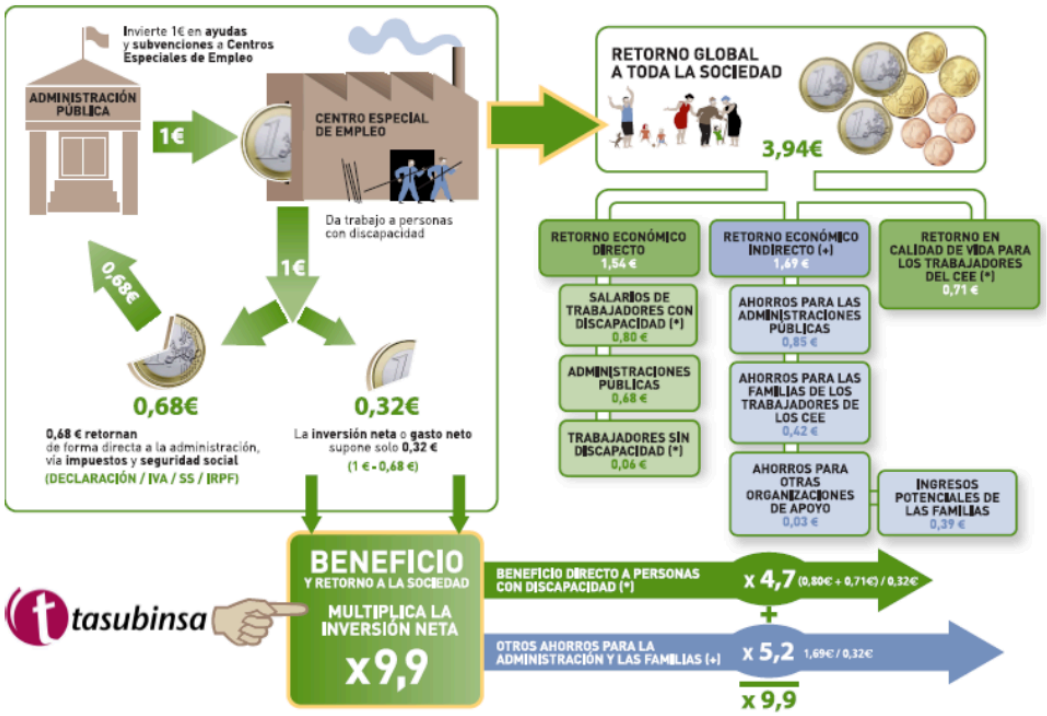

Figure 8 Social Return of Investment (SROI) of a Special Employment Center of social initiative (Tasubinsa, 2017)

The previous figure shows that for each euro invested by the Public Administration, the special employment center is able to return to society 3,16 €, in other words, the net investment made is multiplied 9,9 times thanks to the SEC.

Annex 9. Special Employment Center, describes in detail this and other reasons why an organization of these characteristics is created.

8.6.3 STAFF MANAGEMENT

Workers of a special employment center have the same working conditions as an employee of a standard firm. The peculiarity of these organizations is the existence of a figure who closely monitors and reinforces people with intellectual disabilities, the Support Units (UA) or also called monitors. Jobs in the kitchen are presented in the following organization chart.

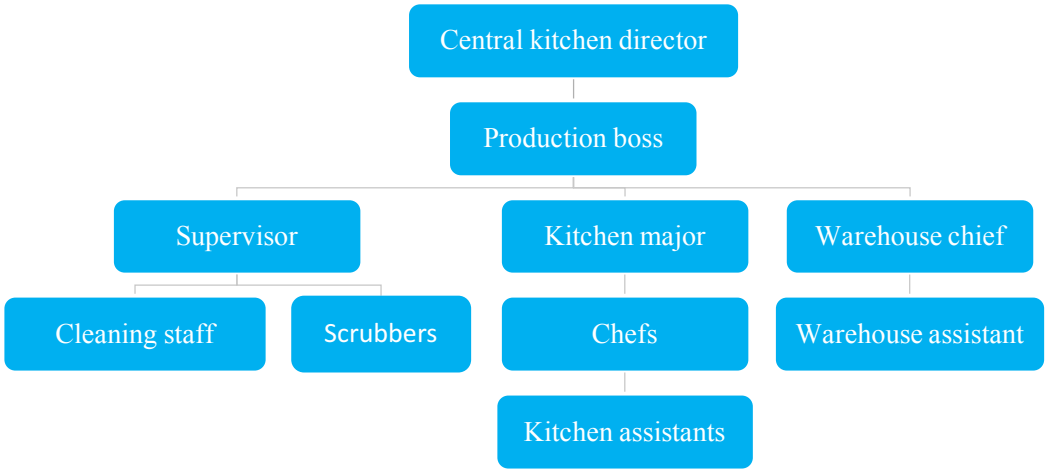

Figure 9 Organizational chart of the SEC

In this kitchen the SU will be employees who occupy a position and have their jobs in the kitchen, and also follow up their colleagues, so they do not appear in the organization chart as such. In total there will be one monitor for every five people with intellectual disabilities.

The staff, as shown in the following table, is made up of 27 people, of whom 16 would have intellectual disability, 4 physical and 7 would have none. Thus, at least 70% of the employees have a certified disability with a degree greater than 33%.

Table 3 SEC staff

Job	**Number of employees**	**Intelectual disability**	**Physical disability**	**No disability**
Director	1			1
Production boss	1			1
Supervisor	1		1	
Kitchen major	1		1	
Warehouse chief	1			1
Cleaning staff	2	2		
scrubber	2	2		
Chef	3		2	1
Warehouse assistant	1	x		
Kitchen assistant	11	x		
Support Unit	3			3
Total	**27**	**16**	**4**	**7**
Percentage (%)	**100**	**59**	**15**	**26**

8.6.4 BUSINESS PLAN

In a business of these characteristics the commercial plan is vitally important. Working with people with disabilities gives the company a competitive advantage in a market where differentiation is really difficult to carry out.

The following SWOT diagram shows some of the strengths and weaknesses of the kitchen as a company. It is important to perform this analysis in order to identify target customers and to be able to carry out a coherent marketing strategy.

	STREGTHS	WEAKNESSES
INTERNAL SOURCE	Social image Individualized care of employees	Lack of experience There are no facilities Great investment
EXTERNAL SOURCE	High demand Biddings for being Special Employment Center Support from public institutions	Leading competition in the sector, there are large groups rooted in.

Figure 10 SWOT analysis

The *Annex 8. Business plan*, develops the details that concern this important tool for the introduction of the product in the market.

9 PLANNING

The production will depend on demand, those days in which demand is zero, for example holidays of major importance, the installation will not open. This requires planning.

The maximum production of the plant is 4.000 daily menus. Assuming an average production of 2.500 meals, it means an annual output of 912.500 servings per year.

The kitchen will be active from Monday to Sunday in a single schedule from 5:30 a.m. to 1:30 p.m. On weekends, due to a lower demand, only one third of the staff will work, giving rest to other employees. Below the tasks in the kitchen are descreibed.

Table 4 Daily kitchen tasks

Hour	**Task**
5:45 - 11:30	Meal of that day
11:45 - 12:45	Preparing meal next day
12:45 -13:30	Daily cleaning

Table 5 Daily weekend tasks

Hour	Task
5:45 - 10:30	Meal of that day
10:45 - 11:45	Preparing meal next day
11:45 -12:30	Daily cleaning
12:30 - 13:30	Weekly cleaning

9.1 RAW MATERIAL NEEDS

Based on an example menu indicated in *Annex 2. Production planning*, quantities of raw materials required for daily production are calculated.

Table 6 Calculation of the quantities

	Food	Quantity (Kg/serving)	Total (kg)
FIRST COURSE	Salad tomato	0,05	200
	Lettuce salad	0,1	400
	Pasta	0,06	240
	Rice for paella	0,07	280
	Legume for potajes	0,075	300
	Vegetables	0,15	600
	Potatoes Main course	0,2	800
	Soup pasta (in liters)	0,015	60
	Mashed potatoes	0,25	1000
SECOND COURSE	Roasted meat, roasts, stews or fried foods	0,15	600
	Bird meat	0,15	600
	Lean meat for roasts, stews and fried foods	0,15	600
	Fish for fried or roasted	0,15	600
	Fried egg or French omelette (in units per serving)	1	4000
	Egg salad or potato omelette (in units per serving)	0,75	3000
FITTINGS	Eggplants, peppers and other vegetables in pistos	0,1	400
	Eggplants, peppers and other vegetables in stews	0,01	40
	Egg to batter (in units per serving)	0,25	1000
	Frozen potatoes for frying of garnish	0,1	400
	Vegetable potatoes or stews	0,1	400
DESSERTS	Fruit for dessert	0,1	400
	Dairy (in units per serving)	1	4000

10 PRIORITY ORDER BETWEEN BASIC DOCUMENTS

If there were any discrepancy between the project documents, whether in terms of objects or assertions, the valid priority order will be that quoted below.

1. Drawings
2. Budget
3. Measurements
4. Report

PUBLIC UNIVERSITY OF NAVARRE
SCHOOL OF AGRICULTURAL ENGINEERING

CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

ANNEXES

Presented by
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June 2017

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CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

ANNEX 1: PRODUCTIVE PROCESS

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1 INTRODUCTION

The production system chosen for this project is the so-called hot online catering system. Meals of this type are served at the destination center for direct consumption. The main objective is to prevent food from decreasing temperature. To do this, once the cooking process is finished, meals are packed in isothermal containers and distributed in vehicles of the same characteristic.

By covering a large volume of production, the weekly process will be planned, so that the tasks can be carried out and done in advance. Therefore some foods will be prepared and cooled to be stored in refrigeration. Chilling, in case of cooking, must be fast, as this reduces the risk of toxin formation as well as the growth of pathogenic microorganisms.

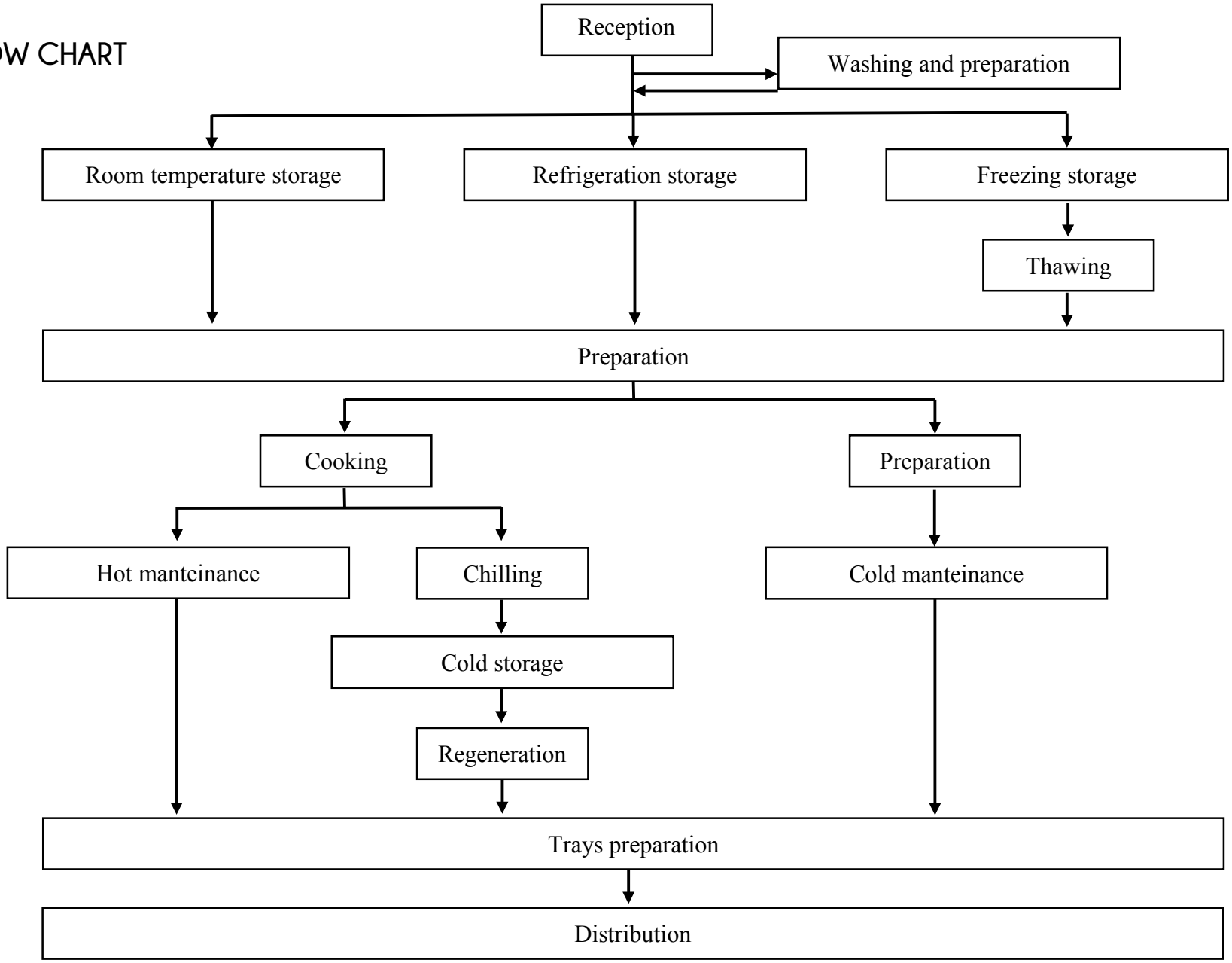
Therefore, it can be concluded that although the system is called hot line, since the hot food is received in the destination center. The system selected is a mixed system, because the production is planned, but the regeneration of food occurs in the same central kitchen.

2 GOOD MANUFACTURING PRACTICES

As it is an agri-food industry, Good Manufacturing Practices (GMP) must be present everytime. This is the reason why we describe below the essential aspects in the kitchen as indicated by b6consultores (2017).

- Food should be cooked properly, ensuring 70ºC in the center of the food.
- Cooling should start at the most 30 minutes after cooking. Food must get less than 10°C in less than 90 minutes.
- Storage must be between 0 and 3 °C.
- Distribution will be under controlled conditions.
- Regeneration will take place immediately after the cooling conditions are completed and will reach 65 ° C in the center of the product.
- Food will be consumed immediately after regeneration is complete.
- If the temperature of cold food rises, the limit is set at more than 5°C for short periods of time. If it exceeds 5ºC but not 10ºC, the food must be consumed within a maximum of 12 hours. If they exceed 10 ° C, the food should be discarded.
- Food must be eaten within 5 days (including the day of production and the day of consumption).

3 FLOW CHART


Reception
Washing and preparation
Room temperature storage
Refrigeration storage
Freezing storage
Thawing
Preparation
Cooking
Preparation
Hot manteinance
Chilling
Cold manteinance
Cold storage
Regeneration
Trays preparation
Distribution

4 PROCESS DESCRIPTION

4.1 RECEPTION

Raw materials are received daily from several local suppliers and as far as possible ecological, in order to have a production as sustainable as possible.

Once received, the warehouse chief records the order and verifies that it matches the order. Also controls the temperature, weight and condition of the product received. The order book is a tool that will make the task easier.

After checking the good condition of the material, it is deposited in the containers suitable for storage.

4.2 WASHING AND PREPARATION

Some products like fruits and vegetables should be washed and pre-conditioned. This reduces the risk of contamination and also reduces the storage space.

4.3 STORAGE

One of the most dangerous stages in food contamination. Ensuring a suitable temperature is essential to avoid spoilage of the raw material. Depending on the type of food, the storage conditions will vary. Each camera is assigned to a different genre in order to reduce the risk of cross-contamination. Likewise, according to the date on which the use of the material is planned, it will be stored in refrigeration or freezing. The product-chamber correspondence is indicated below.

Table 7 Product chamber correspondence

Product	**State**	**Chamber**
Fruits and vegetables	Cooled	Vegetable cooling
	Frozen	Frozen Vegetables
Meat	Cooled	Refrigeration meat
	Frozen	Other frozen
Fish	Cooled	Refrigeration fish
	Frozen	Other frozen
Dairy products	Cooled	Other refrigerated
Durable products	Room temperature	Dry goods

The order of the chambers must be such that it is clearly known which products came before, likewise, all products must be properly labeled with name and date of entry.

4.3.1 THAWING

Frozen foods, prior to preparation, should be thawed in the intended chamber, to promote food safety and reduce risks. The temperature of the chamber will be 4 ° C, until the food is completely thawed.

4.4 PREPARATION

In an industrial kitchen large quantities of food are handled, therefore, prior to preparation or cooking, raw materials must be prepared, as well as quantities will be measured in this process. Thus cooking of food is done in a more efficient and simple way.

This stage will take place in the cold rooms. As in the storage stage, each product will have its preparation room to avoid cross contamination.

Table 8 Cold rooms designation

Product	**Cold room**
Fruits and vegetables	Vegetables cold room
Meat	Meat cold room
Fish	Fish cold room

4.5 COOKING

The term "cooking" is sometimes used synonymously with "preparation". This project omitted this use, since the meaning of the word "preparation" is broader and non-specific than that of "cooking", as it is generically referred to any food modification operation carried out in a kitchen.

Therefore "cooking" will refer to the transformation of food using a heat source., On the contrary "preparation" will be assigned to the transformation without heat source, for instance the preparation of a salad.

Cooking temperatures should be such as to ensure microbiological safety and to ensure food safety.

4.5.1 HOT MAINTENANCE

It is one of the critical points of the process. Cooked food ready to be delivered must be immediately transferred to isothermal containers and, if necessary, stored in hot chambers.

4.5.2 CHILLING

This defines the process of cooling the food, reaching 4 ° C in a short period of time. The blast chiller is the equipment destined to carry out this task. Foods which have been prepared and are intended to be preserved until regeneration are subjected to this stage.

4.5.3 STORAGE IN REFRIGERATION

The chambers of the kitchen allow to keep small amounts of food, so after chilling, the prepared food will be kept in the chambers of the store. There must be an area separated by interior walls in the chamber for the storage of these products.

4.5.4 REGENERATION

It is the reverse process of dejection, in order to provide an optimum state of the food. The temperature should exceed 65ºC in the core of hot foods and 3ºC in the cold.

4.6 PREPARATION

As mentioned above, it corresponds to the transformation of food without the presence of a heat source. A heated zone is designated, called cold kitchen for the elaboration of these alimetos.

4.6.1 COLD MAINTENANCE

As in the hot maintenance stage. Cold food ready for delivery should be stored in cold rooms until the product is dispatched from the kitchen.

4.7 PREPARATION OF TRAYS

Food is delivered at the destination in gastronorm trays, of standardized measures. These trays will go inside isothermal boxes to maintain the temperature. The transfer of the preparation equipment to these containers will be carried out on the hot plate tables to maintain the temperature of food by 65 ° C. In case of cold food, this process will be done in the cold kitchen.

4.7.1 PREPARATION INDIVIDUAL CONTAINERS

Individual diets will be delivered in individual heat-sealed containers. A packaging machine will perform this task.

4.8 DISTRIBUTION

Finally the product is transported to the destination centers in vehicles conditioned for the transport of food.

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CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

ANNEX 2: PLANNING

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1 PRODUCTION DESCRIPTION

The kitchen of this project will produce different diets, indicated below:

- Normal
- Celiac
- Hypocaloric
- Easily masticated mash
- Without meat
- Without lactose
- Without Fish
- Without salt

Moreover the kitchen is prepared to perform any other type of diet demanded by the client.

Daily production of the kitchen will be 4.000 menus, taking as a reference a working day with maximum demand.

Below there is an example menu to later perform a mass balance. Although different types of diets are made, to unify the mass calculation only a common menu will be developed.

Table 9 Weekly example menu

Weekday	**First course**	**Second course**	**Dessert**
Monday	vegetables cream	Meatballs in sauce	Fruit
Tuesday	White beans with potatoes	Hake	Dairy
Wednesday	Pasta	Turkey fillet	Fruit
Thursday	Borage with potatoes	Roasted Chicken Thigh	Dairy
Friday	Green beans with carrot	Roast ham	Fruit
Saturday	Rice with tomato	Cod with tomato	Dairy
Sunday	Cooked soup	Loin In Sauce	Fruit

2 MASS BALANCE

The quantities corresponding to one ration (grammages), and the total masses necessary for the complete production are indicated below.

Table 10 Quantities calculation

	Food	Quantity (Kg/serving)	Total (kg)
FIRST COURSE	Salad tomato	0,05	200
	Lettuce salad	0,1	400
	Pasta	0,06	240
	Rice for paella	0,07	280
	Legume for potajes	0,075	300
	Vegetables	0,15	600
	Potatoes Main course	0,2	800
	Soup pasta (in liters)	0,015	60
	Mashed potatoes	0,25	1000
SECOND COURSE	Roasted meat, roasts, stews or fried foods	0,15	600
	Bird meat	0,15	600
	Lean meat for roasts, stews and fried foods	0,15	600
	Fish for fried or roasted	0,15	600
	Fried egg or French omelette (in units per serving)	1	4000
	Egg salad or potato omelette (in units per serving)	0,75	3000
FITTINGS	Eggplants, peppers and other vegetables in pistos	0,1	400
	Eggplants, peppers and other vegetables in stews	0,01	40
	Egg to batter (in units per serving)	0,25	1000
	Frozen potatoes for frying of garnish	0,1	400
	Vegetable potatoes or stews	0,1	400
DESSERTS	Fruit for dessert	0,1	400
	Dairy (in units per serving)	1	4000

3 PRODUCTIVE PROGRAM

The kitchen will be operational every day of the year. Of course the production will vary depending on actual demand. Most of the customers are schools and companies, for this reason there will be a big difference between summer and winter production.

It is necessary to carry out a production planning for the proper functioning of the kitchen.

Table 11 Daily tasks

Hour	Task
5:45 - 11:30	Meal of that day
11:45 - 12:45	Preparing meal next day
12:45 -13:30	Daily cleaning

Table 12 Daily weekend tasks

Hour	Task
5:45 - 10:30	Meal of that day
10:45 - 11:45	Preparing meal next day
11:45 -12:30	Daily cleaning
12:30 - 13:30	Weekly cleaning

There will be a single work shift, starting at 5:30 a.m. until 1:30 p.m. Every day will follow the same scheme of work, except the weekends that will be shortened an hour and a half to carry out a deep cleaning of the kitchen.

The necessary manpower and kitchen staff structure is described in *Annex 9 Special Employment Center.*

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ANNEX 3: MACHINERY

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1 INTRODUCTION

The objective of this annex is knowing the machinery selected in the project. They are the basis of production and necessary to carry out the processes and meet the forward flow of the kitchen.

2 MACHINERY DESCRIPTION

2.1 VEGETABLES COLD ROOM

2.1.1 VEGETABLES WASHER

This equipment allows the general washing of all kinds of foods such as vegetables and fruits, seafood, liver, meats, etc. It completely removes any impurity like earth, mud with enough precision, so that it can fulfill the requirements of the kitchen.

It has an easy-to-use control panel, it indicates in advance the operator when to start a washing cycle. Wash cycle adjustment, washing time control. It contains a sieve system that removes water from food and then has a tipping system that allows the operator to remove the washed food without touching them.

Table 13 Technical Specifications of the vegetables washer

Dimensions (L x W x H mm)	1750 x 1100 x 1100
Materials	Stainless steel
Production capacity	20 - 40 kg/load
Power	1,5 kW

Image 1 vegetables washer

2.1.2 VEGETABLES WRINGER

Although the vegetable washer removes some of the washing water, sometimes a lot of liquid remains attached to the vegetables. This is why this equipment is necessary.

The centrifugal machine drains all kinds of vegetables in a very short time thanks to its high speed (900rpm) and guaranteeing at all times the quality of the product. It

incorporates three-phase motor fed by electronic variator of great reliability. Thanks to this, the wringers are connected to the mains by means of a single-phase connection.

Table 14 Technical Specifications of the wringer

Dimensions (L x W x H mm)	540 x 800 x 750
Materials	Stainless steel
Production capacity	12 kg por carga
Power	0,55 kW

Image 2 wringer

2.1.3 VEGETABLES PEELER

Equipment potato peeler and adaptable to other vegetables. It facilitates the tasks of peeling large loads, it is an advance in efficiency in the kitchen. High capacity and high production thanks to silicon carbide abrasive (NSF approved) side stirrer.

Table 15 Technical Specifications of the peeler

Dimensions (L x W x H mm)	245x300x400
Materials	Stainless steel
Production capacity	30 kg/load
Power	0,75 kW

Image 3 peeler

2.1.4 VEGETABLES CUTTER

This equipment allows to make cuts of vegetables at large scales, selecting the cut size. A wide range of discs and cutting grids can be provided by combining these types of accessories with more than 70 types of cuts and gratings. It has electronic control panel and easily detachable foot and cover for cleaning.

Table 16 Technical Specifications of the cutter

Dimensions (L x W x H mm)	430 x 410 x 760
Materials	Stainless steel
Production capacity	136 kg/h
Power	1,12 kW

Image 4 cutter

2.2 MEAT COLD ROOM

2.2.1 SAW FOR FROZEN FOOD

This meat and frozen saw is especially suitable for catering establishments, canteens, caterings and the gastronomy industry in general that requires meat, bone and frozen cuts continuously.

Table 17 Technical Specifications of the saw

Dimensions (L x W x H mm)	460 x 455 x 870
Materials	Stainless steel
Production capacity	-
Power	0,75 kW

Image 5 saw

2.2.2 SLICER

Body in aluminum alloy, blade in stainless steel. Safety switch on for-blade. Complete sharpener with safety switch. Transmission to belt. Three-phase operation. Arms for cold cuts.

Table 18 Technical Specifications of the slicer

Dimensions (L x W x H mm)	660 x 540 x 440
Materials	Stainless steel
Production capacity	-
Power	0,3 kW

Image 6 slicer

2.2.3 MINCER

AngeloPo Meat Grinder. Ideal for any type of boneless meat. It has a funnel, pick-up tray and group to grind in stainless steel.

Table 19 Technical Specifications of the micer

Dimensions (L x W x H mm)	270 x 370 x 240
Materials	Stainless steel
Production capacity	-
Power	1,1 kW

Image 7 micer

2.3 CARTS AND TRAYS WASHING AREA

2.3.1 TRAY WASHING MACHINE

In an installation of this size, a washing tunnel with high working capacity is necessary. Valid for all types of utensils used in the kitchen and for trays and isotherms used as means of transport.

Table 20 Technical Specifications of the washing machine

Dimensions (L x W x H mm)	3290 x 1030 x 1700
Materials	Stainless steel
Production capacity	260 baskets/h
Power	60,37 kW

Image 8 washing machine

2.4 PLONGE

2.4.1 POTWASHER

In spite of the presence of a washing tunnel in the kitchen, it is convenient to have in the plonge an exclusive machine for the washing of pots and pans, used for example in the kitchen of special diets.

It has several washing programs, controlled door with half volcable door, tray loading basket and boilers in 18-10 stainless steel, electric control panel

Table 21 Technical Specifications of the potwasher

Dimensions (L x W x H mm)	840 x 880 x 2140
Materials	Stainless steel
Production capacity	-
Power	12,5 kW

Image 9 potwasher

2.5 MAIN KITCHEN

2.5.1 GAS FIRE KITCHEN

Gas cooker with 6 burners in a single plane in stainless steel AISI 304w. With self-supporting structure, removable burners and grids in enamelled cast iron.

Table 22 Technical Specifications of the gas kitchen

Dimensions (L x W x H mm)	1200 x 920 x 250
Materials	Stainless steel
Production capacity	-
Power	48 kW

Image 10 gas kitchen

2.5.2 MIXED OVEN

Mixed oven with digital display and program library. Fan delta T and Low Temperature programs. Fan with autoinversion sense rotation and 3 speed fan, of which one static. Active control of humidity in cooking. Double level of steam generation. ECO function for the reduction of expenses during cooking and washing. Double hygienizing washing system, with manual insertion of the cleaning liquid. Two washing programs. Structure in stainless steel AISI 304, AISI 316L in firing chamber. Dimensions 920x910x1250 mm.

Table 23 Technical Specifications of the mixed over

Dimensions (L x W x H mm)	930 x 916 x 186
Materials	Stainless steel
Production capacity	Capacidad para 20 bandejas 1/1 GN
Power	1,5 kW

Image 11 mixed over

2.5.3 BLAST CHILLER

The blast chiller (or rapid cooling of food) is such an essential element in professional kitchens. Quick chilling offers numerous advantages over the traditional cooling process. Thus, this machine can reduce the internal temperature of foods that have just been cooked in less than two hours. Avoiding bacterial proliferation and maintaining the organoleptic conditions of the product (textures, taste, smell, etc.).

Table 24 Technical Specifications of the chiller

Dimensions (L x W x H mm)	1050 x 1250 x 2260
Materials	Stainless steel
Production capacity	120/72 kg/h (abatimiento/congelación)
Power	3,6 kW

Image 12 chiller

2.5.4 REFRIGERATOR

Cooling system with fins evaporator. Electronic thermometer / thermostat. Automatic defrosting with hot gas. Automatic evaporation of condensation.

Table 25 Technical Specifications of the refrigerator

Dimensions (L x W x H mm)	1050 x 1130 x 2250
Materials	Stainless steel
Production capacity	Carros 2/1 GN 60x80
Power	0,8 kW

Image 13 refrigerator

2.5.5 PASTA COOKER

Although this equipment is not essential in the kitchen, its presence is a great help when cooking any type of pasta, greatly reducing the preparation time. The equipment is of direct heating type with independent stainless burners driven by valve taps.

Table 26 Technical Specifications of the pasta cooker

Dimensions (L x W x H mm)	700 x 900 x 900
Materials	Stainless steel
Production capacity	62 litros
Power	0,8 kW

Image 14 pasta cooker

2.5.6 SMOOTH FRYTOP

Cooking hob. In addition: plate cap. Heating by three independent batteries of burners commanded by thermostatic valve of modulating action, safety thermostat.

Table 27 Technical Specifications of the frytop

Dimensions (L x W x H mm)	1200 x 920 x 250
Materials	Stainless steel
Production capacity	-
Power	10.2 kW

Image 15 frytop

2.5.7 GRILL FRYTOP

Fe510D satin steel cooking hob. Heating with two independent batteries of armored resistances in stainless steel AISI 309. Temperature control with thermostat 100-270 ° C.

Table 28 Technical Specifications of the grill frytop

Dimensions (L x W x H mm)	1200 x 920 x 250
Materials	Stainless steel
Production capacity	-
Power	10.2 kW

Image 16grill frytop

2.5.8 TILTING PAN

This equipment is one of those that differentiates a kitchen of normal dimensions, of an industrial one. Their presence implies a system of mass production.

Heating by battery of electrical resistances powered by 3 position switch. Generation of low pressure steam inside the air chamber. Rear hinged lid and balanced.

Table 29 Technical Specifications of the tilting pan

Dimensions (L x W x H mm)	1540 x 920 x 900
Materials	Stainless steel
Production capacity	270 litros
Power	32 kW

Image 17tilting pan

2.5.9 FRYER

Stamped and hermetic tank integrated into the plane rounded curves and drainage zone. Temperature control with thermostat 100-185 ° C and safety thermostat. Working temperature selection on the dashboard.

Table 30 Technical Specifications of the fryer

Dimensions (L x W x H mm)	1400 x 920 x 900
Materials	Stainless steel
Production capacity	24 litros
Power	5,3 kW

Image 18 fryer

2.5.10 TILTING POT

Equipment with similar features than the tilting pan. The possibility of tilting the equipment facilitates the service giving rise to greater production capacities. It also has the introduction of water in the tank by means of mixing tap and cooking vessel in AISI 316 stainless steel, ideal for the treatment of acidic products.

Table 31 Technical Specifications of the tilting pot

Dimensions (L x W x H mm)	1660 x 1280 x 1050
Materials	Stainless steel
Production capacity	300 litros
Power	42 kW

Image 19 tilting pot

2.6 PACKAGING AREA

2.6.1 HOT TABLE

Phonoabsorbent top with posterior breastplate. Intermediate steel shelf adjustable in 3 heights. Sliding doors with double wall. Stainless legs with 50mm diameter and adjustable. Ventilated heating W 1250.

Table 32 Technical Specifications of the hot table

Dimensions (L x W x H mm)	1800 x 700 x 1000
Materials	Stainless steel
Production capacity	-
Power	1,25 kW

Image 20 hot table

2.6.2 HOT PLATE TABLE

Cooking plates with retention of liquids, equipped with thermal protection device. Each plate is driven by a 7 position switch.

Table 33 Technical Specifications of the hot plate table

Dimensions (L x W x H mm)	700 x 700 x 240
Materials	Stainless steel
Production capacity	-
Power	10,4 kW

Image 21hot plate table

2.6.4 PACKAGING MACHINE

Automatic machine, compact and built in stainless steel for the heat sealing of tray. It is equipped with a tape that collects and positions the trays so that a transfer system inserts them into the mold. The transfer system is double and with the same introductory

movement, it displaces the finished containers from the mold by placing them on the output tape. Film sealing and cutting is done in a single station (MAP if desired). The surplus cover film is rewound.

Table 34 Technical Specifications of the packaging machine

Dimensions (L x W x H mm)	2930 x 1000 x 1700
Materials	Stainless steel
Production capacity	400 trays/hour
Power	5,3 kW

Image 22 packaging machine

PUBLIC UNIVERSITY OF NAVARRE
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Agri-food & Rural Environment Engineering

ANNEX 4: FLOOR LAYOUT

Presented by
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June 2017

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TABLE OF CONTENTS: ANNEX 4

1 DISTRIBUTION SETUP

In order to carry out the layout of the distribution, different fundamental principles have been taken into account. These anchors, which are mentioned below, support a useful, comfortable and harmless kitchen.

- Forward flow
- Separation between clean and dirty areas
- Separation between cold and hot areas
- Design flexibility

Guaranteeing food safety is essential in any food industry, therefore, all design requirements must be strictly complied with.

1.1 FORWARD FLOW

It is the main point of the distriburion. It consists of the layout of different zones in order to ensure that the food always flows in the same direction within the kitchen, since the reception until it is dispatched from the facility. In this way, the crossing of decontaminated foods with those that have not yet been cleaned is prevented.

Similarly, it also applies to workers' circuits, so a worker can not be in contact with the kitchen without having previously gone through the locker rooms. The same thing happens with the washing and storage of dishes and trash removal, advancing in one direction, without retreat, towards its exit point.

Within each location this principle will also be contemplated, since the order of the equipment and utensils must satisfy the logical order of the process, as it is said, the forward flow.

1.2 SEPARATION BETWEEN CLEAN AND DIRTY AREAS

The aim is to prevent cross-contamination of food. For this, the following conditions must be fulfilled.

- Dirty areas with risk of contamination, will separate from the remaining, clean areas.
- In chambers where contaminated and clean food cohabit, they must be separated by a physical division.
- Food preparation areas will not be a transit place.
- Crosses and opposite directions between clean and dirty circuits will be avoided to avoid cross-contamination.

1.3 SEPARATION BETWEEN COLD AND HOT AREAS

The installation will be designed so that, areas where heat is generated (main kitchen, washing room and plonge) are separated from those where refrigeration is required (cold rooms and refrigerated storage).

1.4 DESIGN FLEXIBILITY

The installation should be adaptable to possible future modifications such as a change in distribution or expansion, incorporation of new equipment or any other transformation.

To meet this requirement, areas susceptible to change, such as the main kitchen or storage area, will be designed with a surface margin, so that in the future if it is deemed necessary, new equipment can be incorporated. On the other hand, if wanted to reduce production, the plant would be redistributed, since all the elements and equipment are easily movable.

2 SPACE NECESSITY

There are several methods to determine the surfaces of the areas in a kitchen. Many authors express their opinion on the optimal area according to the number of guests. In this project, several sources have been used to estimate how much space is needed.

2.1 GENERAL SURFACE CALCULATION

The used method is to calculate a mean surface per guest, based on several methods. Then this number is multiplied by the four thousand menus for which the installation is designed. The following table shows the factors employed and the total result.

Table 35 Calculation of the surface necessity

Zone	**Surface (m^2/menú)**	**Total surface (m^2)**
Reception of raw materials	0,010	40
Empty packaging room	0,003	12
Waste room	0,007	28
Warehouse major office	-	10
Total reception zone	**0,020**	**90**
Antechambers	0,010	40
Cold chamber for meat	0,002	8
Cold chamber for dairy products	0,001	4
Cold chamber for vegetables and fruits	0,004	16
Freezer and chanber for fish	0,002	8
Other cold chamber	0,001	4
Total cold storage	**0,020**	**80**
Total storage at mid temperature	**0,005**	**20**
Cold room for vegetables	0,006	24
Cold room for meat and fish	0,010	40
Main kitchen	0,020	90
Cold Kitchen	0,005	20
Plonge	0,009	36
Kitchen boss office	-	12
Total preparation zone and kitchen	**0,230**	**222**
Cleaning room	**0,017**	**68**

Deliver space for prepared food	**0,010**	**40**
Locker rooms and toilets	**0,030**	**120**
TOTAL	**0,332**	**1350**

Apart from the areas present in the table above, there are other non-specific locations of a kitchen, such as offices, services, or a rest area for workers. Such surfaces shall be calculated following areas commonly used for such spaces.

3 FINAL DISTRIBUTION

Following all the considerations of the last section, the design of the distribution of the installation is carried out. Several logical and coherent stages will be followed to guarantee the proper functioning of the same.

First, mandatory entries and exits in the kitchen are indicated: people, gender and garbage.

Then the main areas of the kitchen are outlined. These are: Warehouse, kitchen, social area (where offices and dressing rooms are located) and garbage zone.

Next, the flows between different zones are located.

Finally, trying to adjust the surfaces to those calculated above, all areas and locations are placed on the kitchen. The flow indicated in figure 12 must always be fulfilled. The distribution of the sites, machines and utensils is also done, this information is shown in *Drawing 2. Distribution drawing.*

The following pages describe the circuits explained in this section.

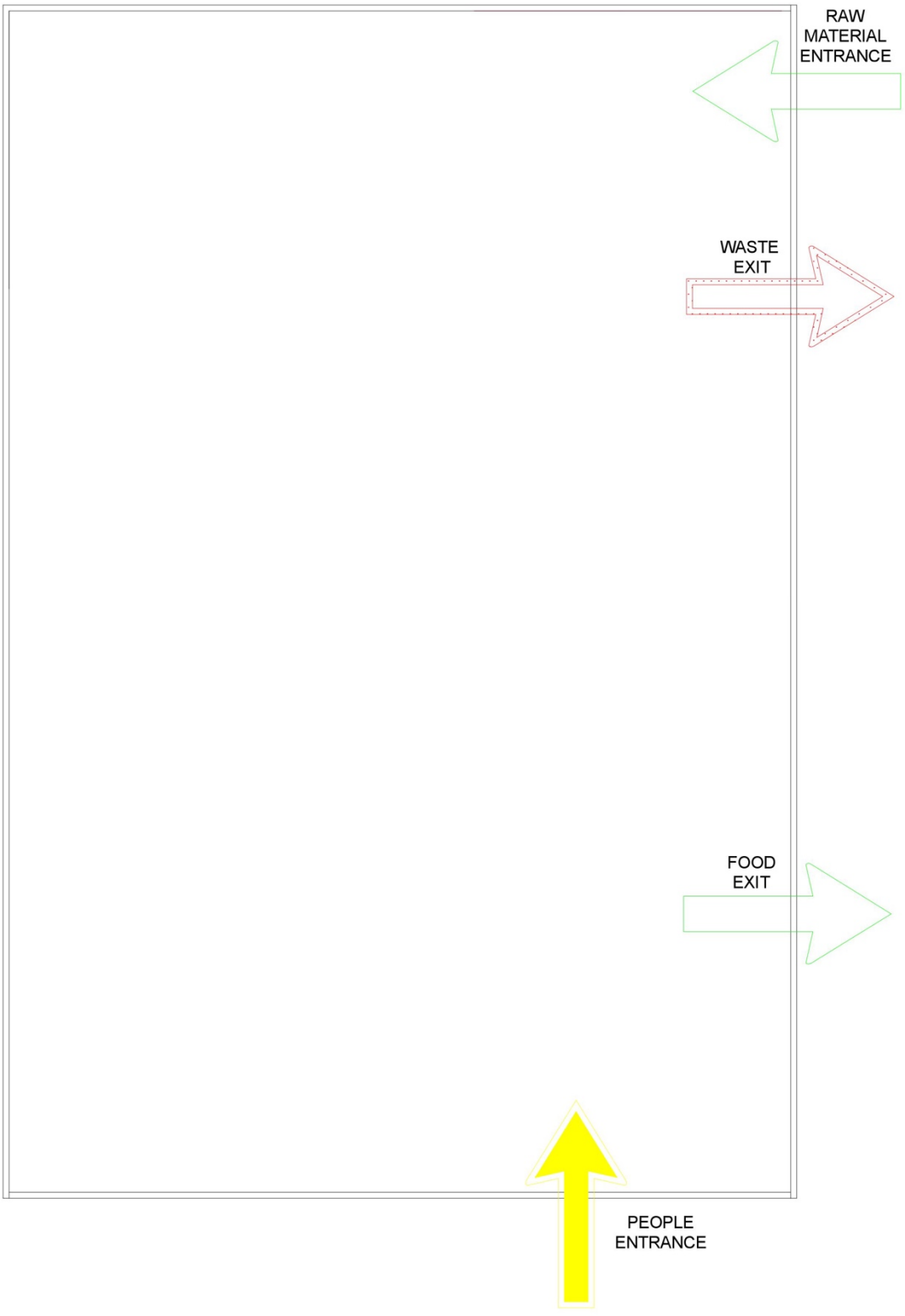

Figure 11 Entrance and exits

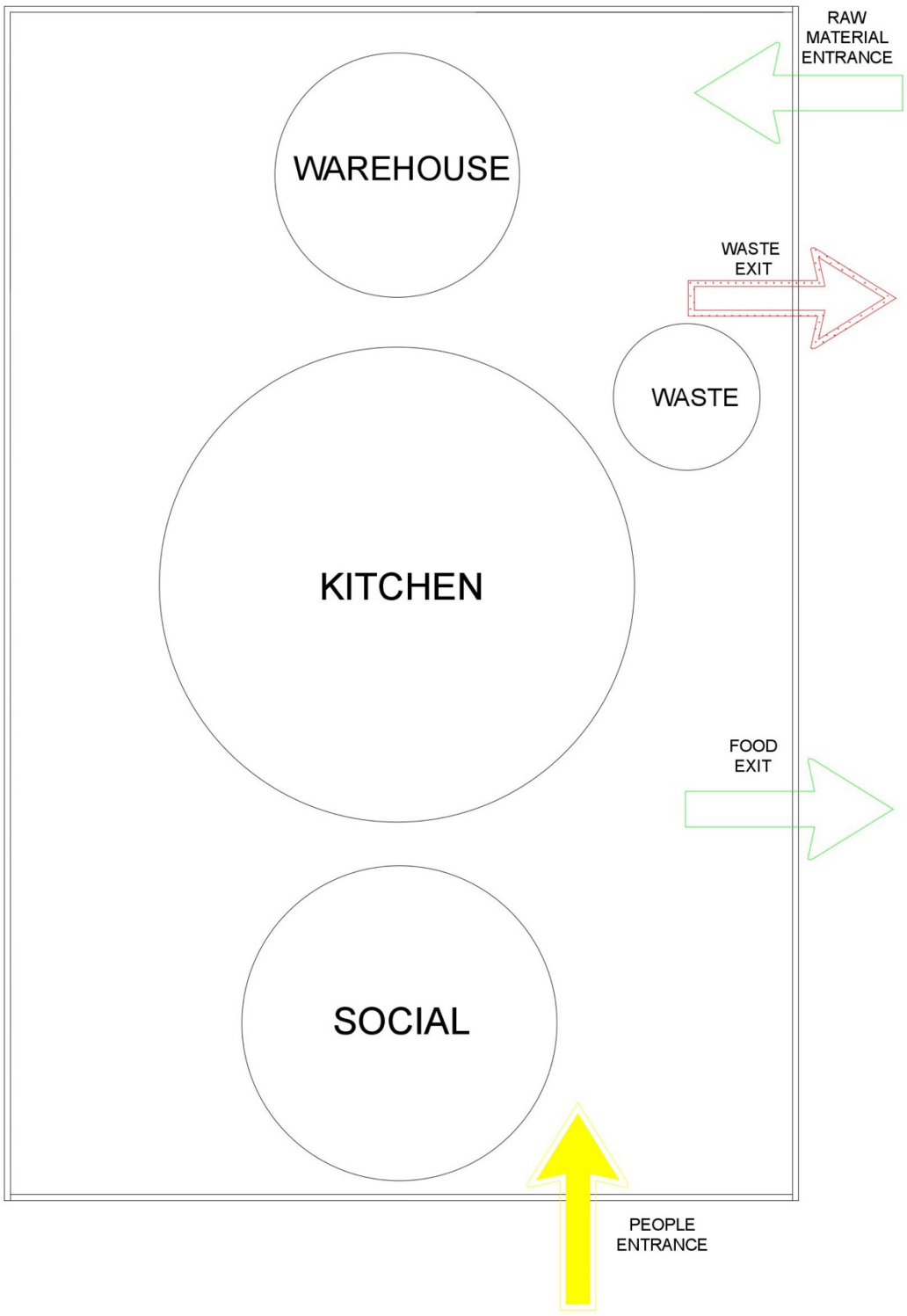

Figure 12 Main areas of the kitchen

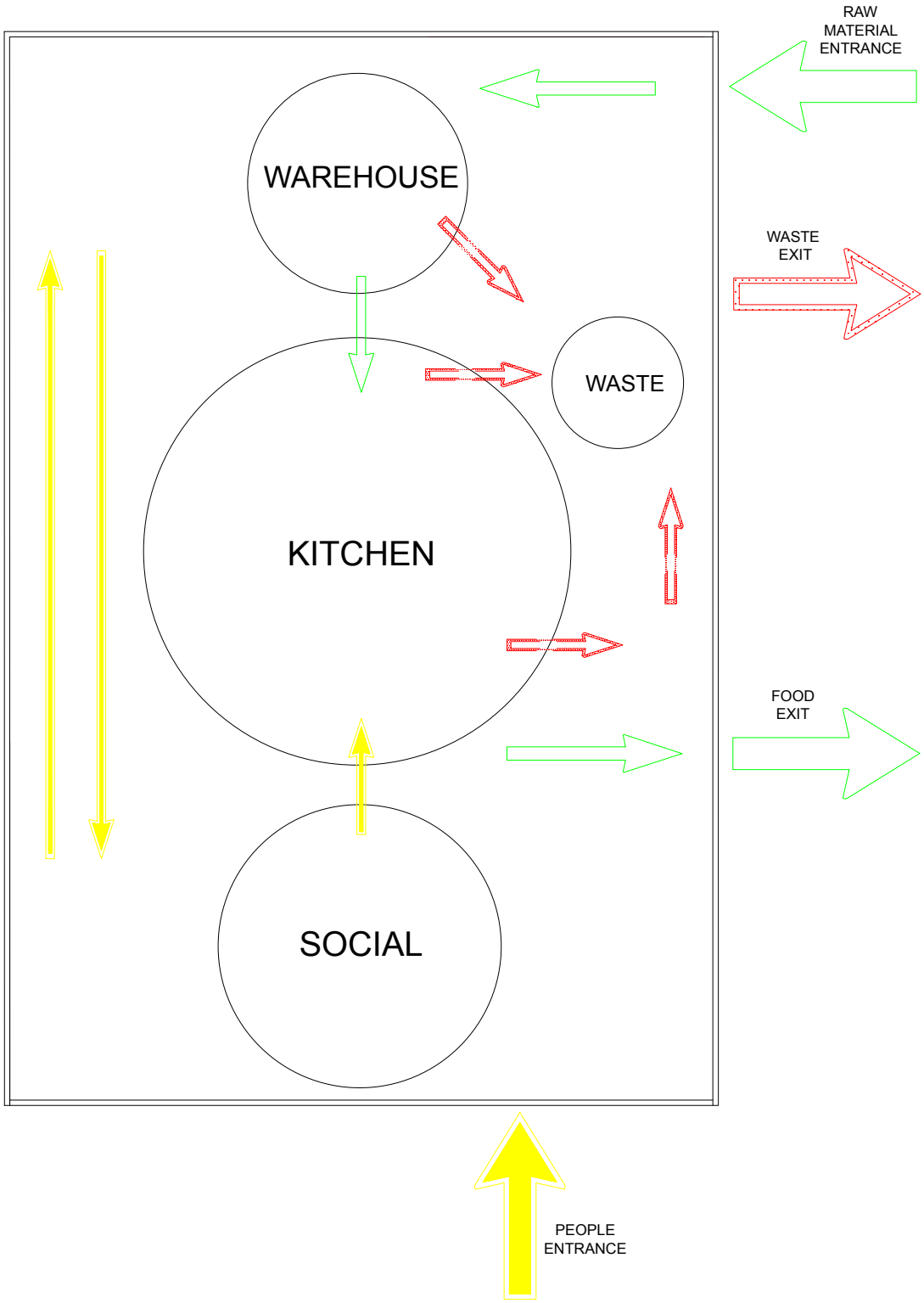

Figure 13 Flows between areas

Figure 14 Final layout and flows

Final surfaces are similar to those calculated, but not identical, due to the fit of spaces. In addition some areas not present in the initial calculation were added for convenience of the installation. Then the final extension of each zone is indicated.

Table 36 Final surfaces

Zone	**Surface (m^2)**
Unload area	15,00
Reception of raw materials	26,62
Empty packaging room	10,22
Vegetables washing room	20,32
Waste room	27,78
Archive office	10,29
Antechamber	40
Cold chamber for meat	9,00
Cold chamber for dairy and others	9,09
Cold chamber for vegetables and fruits	14,42
Cold chamber for fish	7,87
Freezer vegetables	14,42
Freezer other food	9,00
Thawing	6,03
Dry food warehouse	21,19
Cold room for vegetables	22,57
Cold room for meat	22,69
Cold room for fish	22,98
Main kitchen	95,60
Cold Kitchen	21,25
Special diet kitchen	15,79
Plonge	35,90
Carts and trays cleaning area	65,11
Individual packaging area	19,70
Collective packing area	41,60
Deliver prepared food	14,08
Rest zone	21,19
Cleaning room	3,47
Male locker room	54,83
Female locker room	54,83
Support Units office	13.05
Toilets	5,54
Warehouse major office	12,69
Kitchen boss office	17,03
Meeting room	16,32
Total surface area	**961,44**
Total built area	**1.062,54**

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ANNEX 5: PRICE JUSTIFICATION

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TABLE OF CONTENTS: ANNEX 5

1. GLOSARY

Due to the specificity of the words, and in order to facilitate the reading of this document, next table offers the code used, the term in Spanish and its translation in english. The same number will be kept in the documents measurements and budget.

1.1 CAPÍTULO 1: ALBAÑILERÍA Y CERRAMIENTOS / CHAPTER 1: MASONRY AND COLSINGS

Table 37 Code and translation of technical terms in the chapter 1

Code	Term in Spanish	Term in English
01.01	Falso techo	False ceiling
01.02	Ladrillo	Brick
01.03	Mampara doble modular	Modular double screen
01.04	Panel sanitario	Sanitary panel
01.05	Yeso	Plaster

1.2 CAPÍTULO 2: PAVIMENTOS, ALICATADOS Y PINTURAS / CHAPTER 2: FLOORING, TILING AND PAINTING

Table 38 Code and translation of technical terms in the chapter 2

Code	Term in Spanish	Term in English
02.01	Alicatado	Tiling
02.02	Pavimento cocina epoxy	Epoxy kitchen floor
02.03	Pavimento vestuarios	Locker room floor
02.04	Pavimento zona oficinas	Office floor
02.05	Perfil sanitario	Sanitary profile
02.06	Pintura Epoxi s/hormigón	Concrete epoxy paint
02.07	Pintura pared almacén	Warehouse wall paint
02.08	Solado gres antideslizante	Anti-slip stoneware sole

1.3 CAPÍTULO 3: CARPINTERÍA EXTERIOR / CHAPTER 3: EXTERIOR CARPENTRY

Table 39 Code and translation of technical terms in the chapter 3

Code	Term in Spanish	Term in English
03.01	Portón garaje	Garage door
03.02	Puerta entrada	Reinforced door
03.03	Ventanas	Windows

1.4 CAPÍTULO 4: CARPINTERÍA INTERIOR / CHAPTER 4: INTERIOR CARPENTRY

Table 40 Code and translation of technical terms in the chapter 4

Code	Term in Spanish	Term in English
04.01	Puerta de paso 80 cm	Door 80 cm
04.02	Puerta de paso 110 cm	Door 110 cm
04.03	Puerta de paso 120 cm	Door 120 cm
04.04	Puerta de paso ciega	Blind door

1.5 CAPÍTULO 5: VIDRIERÍA / CHAPTER 5: GLASSWARE

Table 41 Code and translation of technical terms in the chapter 5

Code	Term in Spanish	Term in English
05.01	Espejo 3mm	Mirror 3mm
05.02	Vidrio float incoloro planilux 10mm	Glass float colorless planilux 10mm

1.6 CAPÍTULO 6: INSTALACIÓN FRIGORÍFICA / CHAPTER 6: INSTALLATION OF REFRIGERATION

Table 42 Code and translation of technical terms in the chapter 6

Code	Term in Spanish	Term in English
06.01	Cámara congelación	Freezing chamber
06.02	Cámara frigorífica	Cold chamber
06.03	Climatizador. frío compacto pared 6200 w	Compact cold wall air conditioner 6200 w
06.04	Panel poliuchapa prelacada 80mm	Pre-lacquered panel 80mm
06.05	Puerta cámara frigorífica con ventana	Cold chamber door with window

1.7 CAPÍTULO 7: SANITARIOS Y GRIFERÍA / CHAPTER 7: SANITARY WARE AND TAPS AND FITTINGS

Table 43 Code and translation of technical terms in the chapter 7

Code	Term in Spanish	Term in English
07.01	Dispensador jabón	Soap dispenser
07.02	Dispensador toallas de papel	Paper towel dispenser
07.03	Ducha	Shower
07.04	Ducha adaptada	Adapted shower
07.05	Fregadero dos senos	Two-seater sink
07.06	Fregadero un seno	One-seater sink
07.07	Grifo ducha	Shower tap
07.08	Grifo no manual	Non manual tap
07.09	Inodoro	Toilet
07.10	Inodoro adaptado	Adapted toilet
07.11	Inodoro adaptado	Non manual override washbasin
07.12	Lavabo accionamiento no manual	Bathroom washbasin

1.8 CAPÍTULO 8: MAQUINAS Y UTENSILIOS / CHAPTER 8: MACHINERY & UTENSILS

Table 44 Code and translation of technical terms in the chapter 8

Code	Term in Spanish	Term in English
08.01	Abatidor	Blast chiller
08.02	Armarios fríos	Cold closet
08.03	Báscula	Weighing machine
08.04	Campana de extracción central	Central extraction hood

08.05	Campana de extracción lateral	Lateral extraction hood
08.06	Cocedor de pasta	Pasta cooker
08.07	Cortadora de vegetales	Vegetables cutter
08.08	Envasadora atmósfera modificada	Packing machine
08.09	Escurridora de vegetales	Vegetable wringer
08.10	Freidora	Fryer
08.11	Frigorífico	Refrigerator
08.12	Fry top lisa	Smooth fry top
08.13	Fry top parrilla	Grill fry top
08.14	Fuegos	Fires
08.15	Horno	Oven
08.16	Lavadora de vegetales	Vegetables washer
08.17	Lavamarmitas	Pots washer
08.18	Loncheadora	Slicer
08.19	Manguera a presión con dispensador de jabón	Pressure cleaner with soap dispenser
08.20	Máquina lavavajillas de arrastre	Tray dishwasher
08.21	Marmita basculante	Tilting pot
08.22	Mesa caliente	Hot table
08.23	Mesa de placas calientes	Hot plate table
08.24	Peladora de vegetales	Vegetable peeler
08.25	Picadora	Mincer
08.26	Plancha reducida	Griddle
08.27	Sartén basculante	Tilting pan
08.28	Sierra de congelados	Saw for frozen food
08.29	Tabla de corte	Cutting board
08.30	Tabla de corte	Chopboard
08.31	Vitrocerámica	Ceramic hob

1.9 CAPÍTULO 9: MOBILIARIO / CHAPTER 9: FURNITURE

Table 45 Code and translation of technical terms in the chapter 9

Code	Term in Spanish	Term in English
09.01	Bancos vestuario	Locker bench
09.02	Carro transporte con cuba	Transport trolley with tub
09.03	Carros de transporte de bandejas gastronorm	Carts for gastronorm trays
09.04	Conjunto de contenedores de 1000l reciclaje	Container set. 1000l
09.05	Cubo de basura con pedal	Pedal bin
09.06	Estante almacén	Warehouse shelf
09.07	Estante cámaras frío	Cold chamber shelf
09.08	Mesa acero inoxibable	Stainless steel table

09.09	Mesa esquina	Corner table
09.10	Mesa desbarasado acero inoxidable	Stainless steel trash table
09.11	Taquilla	Locker
09.12	Translapleta	Pallet truck

2 PRICE JUSTIFICATION

2.1 CHAPTER 1: MASONRY AND COLSINGS

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
01.01	1,00	m^2	**False ceiling**			
			False ceiling	3,47	3,47	
01.01.01	0,25	h	1st officer	13,70	3,43	
01.01.02	0,25	h	Assistant	12,40	3,10	
01.01.02	1,00	h	Hanguing piece	0,07	0,07	
TOTAL BATCH						10,65
01.02	1,00	m^2	**Brick**			
			Brick	6,93	6,93	
01.02.01	0,25	h	1st officer	13,70	3,43	
01.02.02	0,25	h	Assistant	12,40	3,10	
01.02.03	0,028	m^3	Concrete mortar	60,64	1,70	
TOTAL BATCH						15,15
01.03	1,00	m^2	**Modular double screen**			
			Module	82,00	82,00	
01.03.01	0,17	h	1st officer	13,70	2,33	
01.03.02	0,17	h	Assistant	12,40	2,11	
TOTAL BATCH						86,44
01.04	1,00	m^2	**Sanitary panel**			
			Panel	43,94	43,94	
01.04.01	0,17	h	1st officer	13,70	2,33	
01.04.02	0,17	h	Assistant	12,40	2,11	
TOTAL BATCH						48,38
01.05	1,00	m^2	**Plaster**			
			Plaster	2,34	2,34	
01.05.01	0,30	h	1st officer	13,70	4,11	
01.05.02	0,30	h	Assistant	12,40	3,72	
TOTAL BATCH						10,17

2.2 CHAPTER 2: FLOORING, TILING AND PAINTING

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
02.01	1,00	m^2	**Tiling**			
			White tile	5,46	5,46	
02.01.01	0,30	h	1st officer	14,77	4,43	
02.01.02	0,30	h	Assistant	13,09	3,92	
02.01.03	1,00	m^2	Plastered	11,41	11,41	

TOTAL BATCH						25,23
02.02	1,00	m^2	**Epoxy kitchen floor**			
			Epoxy floor	8,93	8,93	
02.02.01	1,00	h	Floor gang	33,98	33,98	
TOTAL BATCH						68,14
02.03	1,00	m^2	**Locker room floor**			
			Anti-slip tile	22,25	22,25	
02.03.01	0,35	h	1st officer	14,77	5,17	
02.03.02	0,35	h	Assistant	13,09	4,58	
02.03.03	0,03	m^3	Conrete mortar	64,27	1,93	
TOTAL BATCH						33,93
02.04	1,00	m^2	**Office floor**			
			Pavement	22,25	22,25	
02.04.01	0,35	h	1st officer	14,77	5,17	
02.04.02	0,35	h	Assistant	13,09	4,58	
02.04.03	0,03	m^3	Conrete mortar	64,27	1,93	
TOTAL BATCH						33,93
02.05	1,00	m	**Sanitary profile**			
			Profile	9,12	9,12	
02.05.01	0,10	h	1st officer	14,77	1,48	
02.05.02	0,10	h	Assistant	13,09	1,31	
TOTAL BATCH						11,91
02.06	1,00	m^2	**Concrete epoxy paint**			
	0,25	l	Imprima. epoxy	8,20	2,05	
02.06.01	0,35	h	1st officer	15,50	5,43	
02.06.02	0,35	h	Assistant	12,00	4,20	
TOTAL BATCH						11,68
02.07	1,00	m^2	**Warehouse wall paint**			
	0,65	kg	Plastic paint	6,45	4,19	
02.07.01	0,12	h	1st officer	15,50	1,86	
02.07.02	0,12	h	Assistant	12,00	1,44	
TOTAL BATCH						7,49
02.08	1,00	m^2	**Anti-slip stoneware sole**			
			Stoneware	22,25	22,25	
02.08.01	0,35	kg	Paint	5,17	5,17	
02.08.02	0,35	h	1st officer	4,58	4,58	
02.08.03	0,03	h	Assistant	1,93	1,93	
TOTAL BATCH						33,93

2.3 CHAPTER 3: EXTERIOR CARPENTRY

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
03.01	1,00	U	**Garage door**			
			Door	523,59	523,59	
03.01.01	1,20	h	1st officer	14,77	17,72	
03.01.02	1,20	h	Assistant	13,90	16,68	
TOTAL BATCH						557,99
03.02	1,00	U	**Reinforced door**			

			Door	467,89	467,89	
03.02.01	2,30	h	1st officer	14,77	33,97	
03.02.02	2,30	h	Assistant	13,90	31,97	
TOTAL BATCH						533,83
03.03	1,00	U	**Windows**			
			Window	232,14	232,14	
03.03.01	1,20	h	1st officer	14,77	17,72	
03.03.02	1,20	h	Assistant	13,90	16,68	
TOTAL BATCH						266,54

2.4 CHAPTER 4: INTERIOR CARPENTRY

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
04.01	1,00	U	**Door 80 cm**			
			Door	70,50	70,50	
04.01.01	1,00	h	Carpent. gang	34,50	34,50	
TOTAL BATCH						105,00
04.02	1,00	U	**Door 110 cm**			
			Door	78,23	78,23	
04.02.01	1,00	h	Carpent. gang	34,50	34,50	
TOTAL BATCH						217,73
04.03	1,00	U	**Door 120 cm**			
			Door	83,30	83,30	
04.03.01	1,00	h	Carpent. gang	34,50	34,50	
TOTAL BATCH						335,53
04.04	1,00	U	**Blind door**			
			Door	76,35	76,35	
04.04.01	1,00	h	Carpent. gang	34,50	34,50	
TOTAL BATCH						446,38

2.5 CHAPTER 5: GLASSWARE

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
05.01	1,00	U	**Mirror 3mm**			
			Mirror	75,60	75,60	
05.01.01	0,25	h	1st officer	16,17	4,04	
05.01.02	0,25	h	Assistant	14,85	3,71	
TOTAL BATCH						83,36
05.02	1,00	m^2	**Glass float colorless planilux 10mm**			
			Glass	84,34	84,34	
05.02.01	0,25	h	1st officer	16,17	4,04	
05.02.02	0,25	h	Assistant	14,85	3,71	
TOTAL BATCH						92,10

2.6 CHAPTER 6: INSTALLATION OF REFRIGERATION

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
06.01	1,00	U	**Freezing chamber**			
			Chamber	6.575,02	6.575,02	
06.01.01	6,00	h	Cuadrilla climat.	29,80	178,80	
TOTAL BATCH						6.753,83
06.02	1,00	U	**Cold chamber**			
			Chamber	5.365,86	5.365,86	
06.02.01	6,00	h	Cuadrilla climat.	29,80	178,80	
TOTAL BATCH						5.544,66
06.03	1,00	U	**Compact cold wall air conditioner 6200 w**			
			Conditioner	3.198,45	3.198,45	
06.03.01	4,00	h	Condit. gang	29,80	119,20	
TOTAL BATCH						3.317,65
06.04	1,00	m^2	**Pre-lacquered panel 80mm**			
			Panel	43,34	43,34	
06.04.01	0,35	h	1st officer	16,17	5,66	
06.04.02	0,35	h	Assistant	14,85	5,20	
TOTAL BATCH						54,20
06.05	1,00	U	**Cold chamber door with window**			
			Door	200,34	200,34	
06.05.01	1,00	h	1st officer	16,17	16,17	
06.05.02	1,00	h	Assistant	14,85	14,85	
TOTAL BATCH						231,36

2.7 CHAPTER 7: SANITARY WARE AND TAPS AND FITTINGS

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
07.01	1,00	U	**Soap dispenser**			
			Dispenser	19,24	19,24	
TOTAL BATCH						19,24
07.02	1,00	U	**Paper towel dispenser**			
			Dispenser	22,67	22,67	
TOTAL BATCH						22,67
07.03	1,00	U	**Shower**			
			Shower	34,24	34,24	
07.03.01	0,80	h	Plumb. 1st officer	15,61	12,49	
07.03.02	1,00	U	Plate	96,16	96,16	
07.03.03	1,00	U	Single lever	49,00	49,00	
07.03.04	1,00	U	Drain	10,00	10,00	
TOTAL BATCH						167,65
07.04	1,00	U	**Adapted shower**			
			Shower	34,24	34,24	
07.04.01	0,80	h	Plumb. 1st officer	15,61	12,49	
07.04.02	1,00	U	Plate	96,16	96,16	
07.04.03	1,00	U	Single lever	49,00	49,00	
07.04.04	1,00	U	Drain	10,00	10,00	

TOTAL BATCH						167,65
07.05	1,00	U	**Two-seater sink**			
			Sink	198,90	198,90	
07.05.01	0,80	h	Plumb. 1st officer	15,61	12,49	
TOTAL BATCH						379,04
07.06	1,00	U	**One-seater sink**			
			Sink	148,80	148,80	
07.06.01	0,80	h	Plumb. 1st officer	15,61	12,49	
TOTAL BATCH						540,32
07.07	1,00	U	**Shower tap**			
			Tap	119,39	119,39	
07.07.01	0,50	h	Plumb. 1st officer	15,61	7,81	
TOTAL BATCH						127,20
07.08	1,00	U	**Non manual tap**			
			Tap	79,90	79,90	
07.08.01	0,50	h	Plumb. 1st officer	15,61	7,81	
TOTAL BATCH						214,90
07.09	1,00	U	**Toilet**			
			Toilet	125,79	125,79	
07.09.01	1,30	h	Plumb. 1st officer	15,61	20,29	
TOTAL BATCH						146,08
07.10	1,00	U	**Adapted toilet**			
			Toilet	164,53	164,53	
07.10.01	1,30	h	Plumb. 1st officer	15,61	20,29	
TOTAL BATCH						184,82
07.11	1,00	U	**Non manual override washbasin**			
			Washbasin	362,50	362,50	
07.11.01	0,50	h	Plumb. 1st officer	15,61	7,81	
TOTAL BATCH						370,31
07.12	1,00	U	**Bathroom washbasin**			
			Washbasin	82,23	82,23	
07.12.01	1,30	h	Plumb. 1st officer	15,61	20,29	
TOTAL BATCH						102,52

2.8 CHAPTER 8: MACHINERY AND UTENSILS

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
08.01	1,00	U	**Blast chiller**			
			Blast chiller	6.830,20	6.830,20	
TOTAL BATCH						6.830,20
08.02	1,00	U	**Cold closet**			
			Closet	479,20	479,20	
TOTAL BATCH						479,20
08.03	1,00	U	**Weighing machine**			
			Machine	129,00	129,00	
TOTAL BATCH						129,00
08.04	1,00	U	**Central extraction hood**			
			Hood	943,49	943,49	

TOTAL BATCH						943,49
08.05	1,00	U	**Lateral extraction hood**			
			Hood	734,98	734,98	
TOTAL BATCH						734,98
08.06	1,00	U	**Pasta cooker**			
			Cooker	39.423,64	39.423,64	
TOTAL BATCH						39.423,64
08.07	1,00	U	**Vegetables cutter**			
			Cutter	525,23	525,23	
TOTAL BATCH						525,23
08.08	1,00	U	**Packing machine**			
			Packing machine	24.983,93	24.983,93	
TOTAL BATCH						24.983,93
08.09	1,00	U	**Vegetable wringer**			
			Wringer	9.307,23	9.307,23	
TOTAL BATCH						9.307,23
08.10	1,00	U	**Fryer**			
			Fryier	25.890,32	25.890,32	
TOTAL BATCH						25.890,32
08.11	1,00	U	**Refrigerator**			
			Refrigerator	1.749,71	1.749,71	
TOTAL BATCH						1.749,71
08.12	1,00	U	**Smooth fry top**			
			Fry-top	447,33	447,33	
TOTAL BATCH						447,33
08.13	1,00	U	**Grill fry top**			
			Fry top	524,93	524,93	
TOTAL BATCH						524,93
08.14	1,00	U	**Fires**			
			Fires	1.607,70	1.607,70	
TOTAL BATCH						1.607,70
08.15	1,00	U	**Oven**			
			Oven	8.918,98	8.918,98	
TOTAL BATCH						8.918,98
08.16	1,00	U	**Vegetables washer**			
			Washer	9.135,34	9.135,34	
TOTAL BATCH						9.135,34
08.17	1,00	U	**Pots washer**			
			Washer	13.805,00	13.805,00	
TOTAL BATCH						13.805,00
08.18	1,00	U	**Slicer**			
			Slicer	469,00	469,00	
TOTAL BATCH						469,00
08.19	1,00	U	**Pressure cleaner with soap dispenser**			
			Cleaner	734,00	734,00	
TOTAL BATCH						734,00
08.20	1,00	U	**Tray dishwasher**			
			Dishwasher	72.946,23	72.946,23	
TOTAL BATCH						72.946,23

08.21	1,00	U	**Tilting pot**			
			Pot	22.337,67	22.337,67	
TOTAL BATCH						22.337,67
08.22	1,00	U	**Hot table**			
			Table	1.083,12	1.083,12	
TOTAL BATCH						1.083,12
08.23	1,00	U	**Hot plate table**			
			Table	2.340,00	2.340,00	
TOTAL BATCH						2.340,00
08.24	1,00	U	**Vegetable peeler**			
			Peeler	942,00	942,00	
TOTAL BATCH						942,00
08.25	1,00	U	**Mincer**			
			Mincer	3.109,70	3.109,70	
TOTAL BATCH						3.109,70
08.26	1,00	U	**Griddle**			
			Griddle	235,44	235,44	
TOTAL BATCH						235,44
08.27	1,00	U	**Tilting pan**			
			Pan	16.571,24	16.571,24	
TOTAL BATCH						16.571,24
08.28	1,00	U	**Saw for frozen food**			
			Saw	834,32	834,32	
TOTAL BATCH						834,32
08.29	1,00	U	**Cutting board**			
			Cutting board	45,00	45,00	
TOTAL BATCH						45,00
08.30	1,00	U	**Chopboard**			
			Chopboard	200,00	200,00	
TOTAL BATCH						200,00
08.31	1,00	U	**Ceramic hob**			
			Hob	160,00	160,00	
TOTAL BATCH						160,00

2.9 CHAPTER 9: FURNITURE

Code	Quantity	Unit	Description	Price (€)	Subtotal (€)	Amount (€)
09.01	1,00	U	**Locker bench**			
			Bench	122,65	122,65	
TOTAL BATCH						122,65
09.02	1,00	U	**Transport trolley with tub**			
			Trolley	156,00	156,00	
TOTAL BATCH						156,00
09.03	1,00	U	**Carts for gastronorm trays**			
			Cart	347,27	347,27	
TOTAL BATCH						347,27
09.04	1,00	U	**Container set. 1000l**			
			Set	1.200,00	1.200,00	

TOTAL BATCH						1.200,00
09.05	1,00	U	**Pedal bin**			
			Bin	122,06	122,06	
TOTAL BATCH						122,06
09.06	1,00	U	**Warehouse shelf**			
			Shelf	108,90	108,90	
TOTAL BATCH						108,90
09.07	1,00	U	**Cold chamber shelf**			
			Shelf	209,00	209,00	
TOTAL BATCH						209,00
09.08	1,00	m	**Stainless steel table**			
			Mesa	208,21	208,21	
TOTAL BATCH						208,21
09.09	1,00	U	**Corner table**			
			Table	369,98	369,98	
TOTAL BATCH						369,98
09.10	1,00	U	**Stainless steel trash table**			
			Table	480,70	480,70	
TOTAL BATCH						480,70
09.11	1,00	U	**Locker**			
			Locker	25,00	25,00	
TOTAL BATCH						25,00
09.12	1,00	U	**Pallet truck**			
			Pallet truck	277,09	277,09	
TOTAL BATCH						277,09

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CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

ANNEX 6: QUALITY CONTROL

Presented by
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June 2017

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1 INTRODUCTION

The quality of a product is defined as the inherent characteristics of it that serve to meet or exceed the expectations of the consumer. It is an overall result of all internal and external attributes of the company. Starting from raw materials to the management system of the organization.

The quality control is the tool that allows to measure this degree of exigency of the product and of the process. All the tools developed within this annex have common objectives that are detailed below.

- Fulfilling the requirements of the UNE-EN ISO 9001:2000 standard, concerning quality management systems.
- Meeting or exceeding customer expectations.
- Record data for continuous improvement.
- Reduce the risk of contamination as far as possible to ensure food safety.

The following annex defines the tools to be implemented in the process to perform a good management of quality.

2 QUALITY CONTROL

2.1 RAW MATERIAL CONTROL

The first control to be carried out in a kitchen is that of raw materials. The quality of the final product can not be guaranteed if the initial material does not meet expectations. There are several stages:

2.1.1 RECEPTION

When receiving the raw material, the warehouse chief will carry out a control of temperature, product status and organoleptic characteristics, in order to approve the quality of the product. A raw material registration book will be created where the following characteristics must me registered.

- Date
- Order number
- Supplier
- Product
- Temperature
- State
- Expiration
- Issues

On the other hand, samples will be collected periodically in order to do an analysis of the product. It is also important that the conditions of transport have been adequate, as well as the discharge practices. They are critical points where the raw material is susceptible to loss quality.

2.2 PROCESS CONTROL

As a common measure to all processes, the temperature of the equipment that generates heat or cold is recorded digitally.

2.2.1 STORAGE

After receiving the food will be divided for storage according to the type. The temperature and humidity conditions must be strictly controlled. Statistical data will be collected from these parameters, establishing the limits as follows:

Table 46 Temperature and humidity conditions

Type of product	Place	Temperature	Humidity
Not perishable	Not perishable stock	13-23ºC	50%
Cooled	Refrigeration chambers	4ºC	90%
Frozen	Freezing chambers	8ºC	90%

2.2.2 PREPARATION

To avoid cross-contamination, each kind of food will be prepared in a different room.

Table 47 Cold rooms designation

Product	Cold room
Vegetables and fruits	Vegetables cold room
Meat	Meat cold room
Fish	Fish cold room

In addition, the temperature of these rooms will be controlled, the temperature should never exceed 16ºC

2.2.3 COOKING

Cooking temperatures should be such to ensure microbiological safety and to ensure food safety. Therefore, at least 65 ° C must be reached in the inner core of the food.

2.2.4 HEAT MAINTENANCE

It is one of the critical points of the process. Cooked food ready to be delivered must be immediately transferred to isothermal containers and, if necessary, stored in hot chambers.

In no case can the temperature be reduced below 50 ° C in the food core.

2.2.5 HEATING

The temperature must exceed 65ºC in the core of hot foods and 3ºC in the cold.

2.3 FINISHED PRODUCT CONTROL

Royal Decree 3484/2000 offers guidelines indicative of the permissible microbiological levels in cooked foods. For this, samples will be collected after cooking, in all food produced in the kitchen. Later, several studies will be carried out to verify that law is fulfilled.

2.3.1 MICROBIOLOGICAL STUDY

The parameters that must be met by food shipped in the kitchen are listed in the following table. The R.D. 3484/2000 sets the limits.

Table 48 Microbiológical limits

Microorganism	**Limits**
Aerobic mesophilic	10^4 cfu/g
Enterobacteria lactose +	10^2 cfu/g
E. coli	Absence in 1 g
Salmonella sp.	Absence in 25 g
S. aureus	10^2 cfu/g
L. monocytogenes	Absence in 25 g
Other limits	They shall not contain any other pathogenic microorganisms or their toxins in an amount which affects health of consumers. Sampling will be done on the product ready for sale, sale or supply.

2.3.2 PHYSICAL - CHEMICAL STUDY

On the other hand a study will be carried ou,t in which the following parameters will be measured, to verify that it meets the parameters required for each type of food.

- Fatty matter
- Humidity
- Proteins
- Minerals
- Organoleptic characteristics

2.4 EMPLOYEES CONTROL

It will be necessary to prepare a manual of good manufacturing practices (GMP). In addition, due to the characteristics of the employees, an easy-to-understand manual will be developed and posters will be implemented with visual aids for workers.

All persons within the kitchen must comply with the handling regulations *RD 852/2004*, concerning the hygiene of foodstuffs, which should monitor the health of workers and their correct personal hygiene, apart from wearing the suitable uniform for each job.

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HAZARD ANALYSIS AND CRITICAL CONTROL POINTS

Presented by
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1 INTRODUCTION

According to the Spanish Association for Quality (AEC), the HACCP (Hazard Analysis and Critical Control Points) is the preventive system of food safety management that applies to the entire food chain, from primary production to retail distribution.

In 1993, the European Commission published *directive 93/43* establishing the obligation to implement HACCP systems for all European food industries. This legislation has been amended at a later date, although there is still an obligation to apply the HACCP principles in the food sector.

The HACCP principles established by FAO and WHO are as follows:

- Principle 1. Conducting a hazard analysis
- Principle 2. Determining critical control points (CCPs).
- Principle 3. Establishing Critical Limits
- Principle 4. Establishing a monitoring system
- Principle 5. Establishing corrective measures
- Principle 6. Establishing verification procedures
- Principle 7. Establishing a documentation system on procedures and records associated with HACCP.

(2017) www.aec.es/web/guest/centro-conocimiento/appcc

2 SCOPE

Regulation 852/2004, of 29 April 200,4 on "Hygiene of foodstuffs" provides for the obligation of food businesses to create, apply and maintain a system of self-control based on the principles of the HACCP system. Therefore, as the central kitchens are considered an agri-food industry, it is necessary to apply the HACCP system.

3 IMPLEMENTATION OF THE HACCP

3.1 HACCP TEAM

Thw implementation of any system requires a team responsible for it. This group will be formed by employees of the center, familiarized with the product and in contact with the kitchen, cleaning processes, handling processes ... The team is formed as follows:

- Team boos: Kitchen major
- Assistant 1: Chef
- Assistant 2: Kitchen assistant
- Secretary: Supervisor

The team should meet once a month to evaluate the kitchen in accordance with HACCP, share observations and evaluate the measures imposed in previous meetings. If any employee observes any irregularitY in the system, he or she must notify a member of the team. That member will assess whether the anomaly requires an extraordinary meeting, or the roblem can wait to be estimated at the next meeting. Then the irregularity will be assessed and the corresponding corrective measures will be assigned.

3.1.1 HACCP TEAM ORGANIZATION CHART

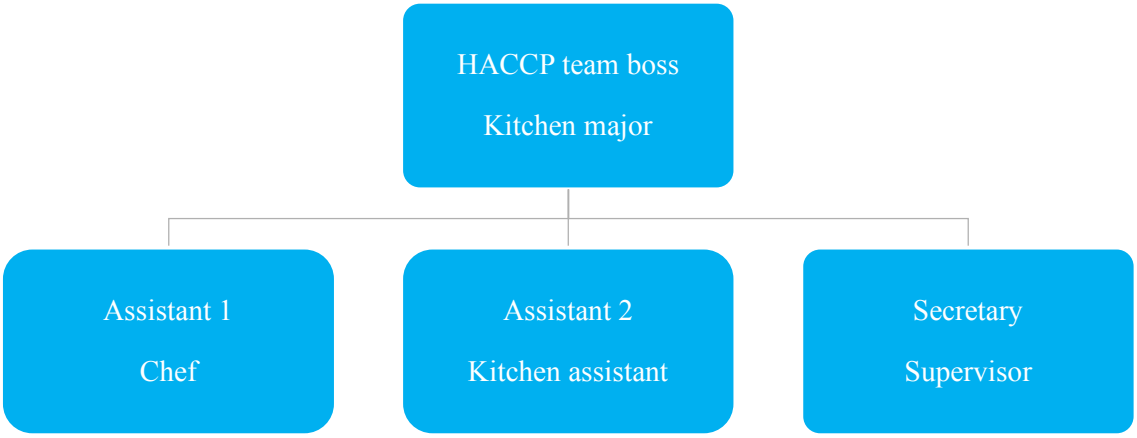

Figure 15 HACCP team organizational chart

3.2 RISK PREVENTION PLANS

In order for the system to be effective it is necessary to carry out the following prevention plans:

- Good agricultural practices
- Training plan for workers (food handlers)
- Approved supplier control plan
- Hygiene plan (cleaning and disinfection)
- Water control plan
- Plan of pest control
- Equipment maintenance and calibration plan
- Traceability plan
- Good handling practice plan
- Waste Management Plan
- Transportation control plan

* Risk prevention plans are included in the process analysis, section 3.5. Measures not specified in the table will be common to the entire process.

3.3 FLOWCHART

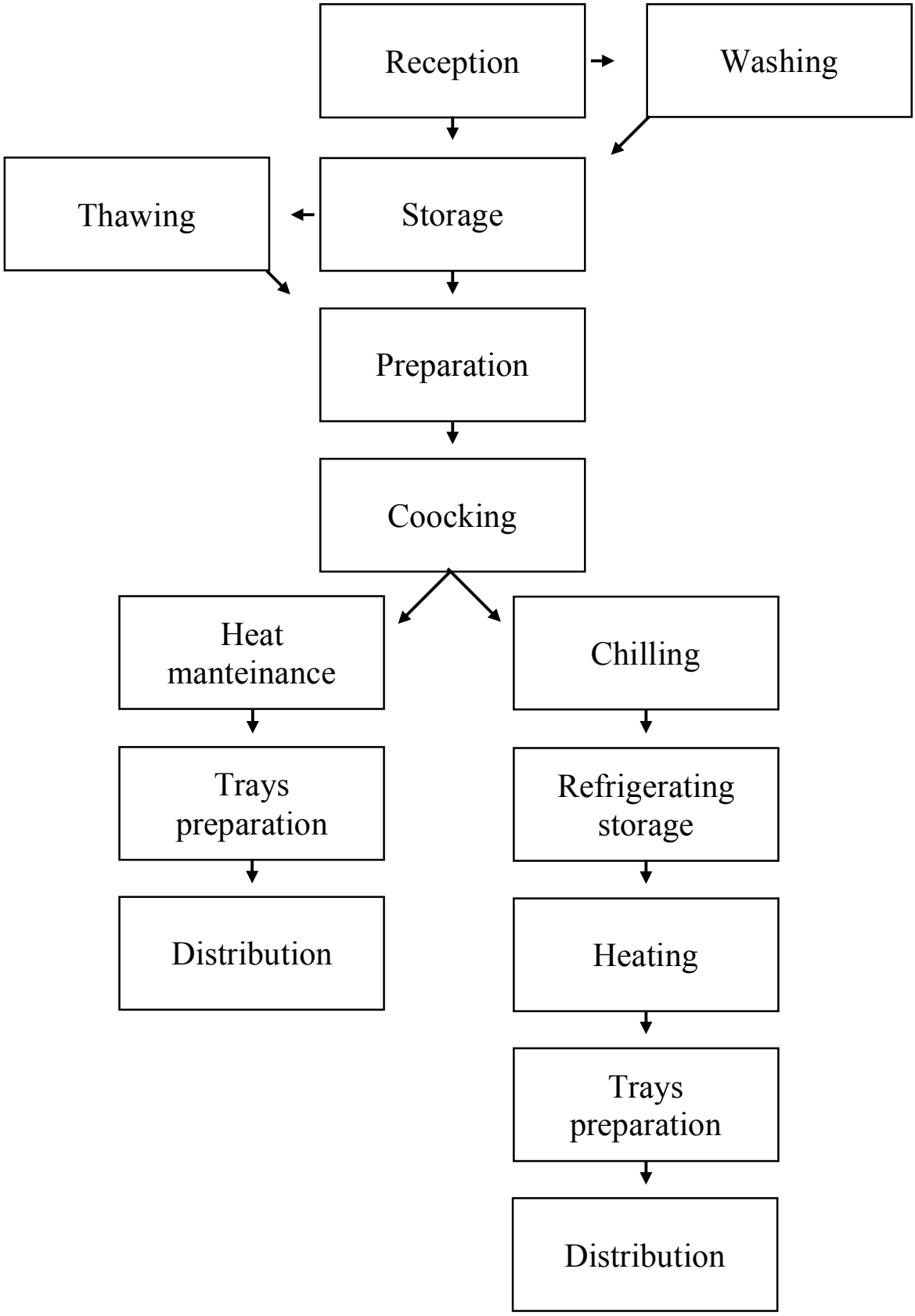

Figure 16 Flow chart of the process simplified

3.4 PROCESS DESCRIPTION

Montes, Lloret and López (2009) p.21, describe by the following table each of the basic operations of the processes involved in the forward march of a central kitchen.

Table 49 Basic operations of the elaboration process. Montes, Lloret y López (2009) p.21

Reception operations: Includes the input activities of the raw materials in the establishment. The raw materials received may be presented in a natural state or processed.

Storage operations: Includes the deposit and maintenance of the raw materials received until the moment of its use. Two types of storage are possible depending on the temperature at which food is stored:

1. At room temperature, when the temperature is not regulated.
2. Refrigerator. In which two types are recognized:
   - In cooling: when the temperature is regulated so that it is close and above 0 °C. It is also called positive cold.
   - In freezing: when the temperature is adjusted to be below 0 °C. It is also called negative cold.

Thawing operations: Includes the action intended to obtain by means of a heat input the loss of the frozen state in the food.

Cold food preparation operations: Includes the set of culinary modification operations (excluding cooking operations) carried out on raw materials or semi-processed cold foods. The most common culinary practices applied according to the type of food are:

1. In raw raw materials of animal origin, not decontaminated:
   - Cleaning, boning, cutting, cutting, filleting, chiseling, etching and chopping of meats.
   - Plucking and preparation of game meat with feather.
   - Complementary culinary operations for meat: such as briquetting, marinating, breading, flouring, breading, mixing, flavoring and dressing, preparation of ballotines, skewers and skewers, formation of raw agglomerates (meatballs, hamburgers and raw farts) Filling and welding of parts, preparation of poppet and papillote, and assembly of trays for their introduction in ovens or other installations.
   - Preparation of offal.
   - Cleaning, desamping, deburring, defrosting, gutting, heading, skinning, chiseling and fish cutting.Supplementary culinary operations for fish: such as preparation of skewers and preparation of base for mousse assembly of trays for their introduction in ovens or other facilities.

- Preparation and cleaning of raw seafood.

2. In raw raw materials of plant origin and fungi, not decontaminated:
   - Washing and weeding of fruits.
   - Cleaning and preparation of edible fungi.
   - Scraping and peeling of vegetables and tubers.
   - Cleaning and clearing vegetables.
   - Washing and / or disinfecting vegetables.
3. In cold decontaminated foods:
   - Slicing, slicing and dicing of cheeses, smoked foods, cured, cooked or salted meat products, and other similar processed raw materials.
   - Cutting, chopping, deboning, refilling, turning, emptying and reduction to fragments of different shapes - for example; Brunoise, mirepoix, douxelle, juliana, concassé or minestrone - of peeled or washed and disinfected vegetables.
   - Preparation of cold appetizers (such as canapes, sandwiches) and Macedonians.
   - Preparation of semi-processed agglomerated foods: croquettes, cannelloni, patties, puddings, vegetable cakes and decontaminated fillings.
   - Assembly of pizzas and spring rolls.
   - Preparation and salting of food of second, fourth and fifth range.
   - Portion of cold desserts such as tarts and ice cream.
   - Preparation of sauces, foams and cold creams.
   - Finishing and filling of cold food: assembling, seasoning and seasoning, filling and addition of cold food.
   - Assembly and dressing of salads.

Cold maintenance operations: Consists of preserving the semi-processed foods and processed in the refrigeration regime until the next operation of the processing process takes place. The difference between cold storage and cold storage therefore lies in the type of food covered by each. Frequently both are designated in an integrated way with the term "cold storage".

Cooking operations: Involves the transformation of food using a heat source. The most commonly used media are waves or radiation through the air (roast or grilled, roasted in the old way by placing the food in front of a source of heat generated by combustion, microwave cooking, bake and gratin in oven or salamander), Frying, sautéing, stirring, boiling, poaching and steaming), water or steam (steam cooking, baking, blanching, blanching, boiling, poaching and poaching). Depending on the temperatures applied in the cooking medium, conventional cooking, when they are equal to or greater than 100 ° C, or low temperature cooking, when used lower, usually done by means of convection-steam ovens or Hot water.

Hot food preparation operations: Includes the set of culinary modification operations performed after cooking on hot foods:

- Unmolding, carving, cutting and portioning of hot foods.
- Clarified, deglazed and defatted of hot liquid foods - smoked, bottoms and broths - Binding and reduction of sauces and other food components
- Decorating, finishing, dressing and flavoring, casting and assembling food for subsequent hot consumption.
- Crushed to form purees and creams.

Hot-keeping operations: Includes the maintenance of semi-processed or processed foods after heating or heating in a calorific manner, until the next processing operation takes place. This operation is also referred to as the term "heat or hot storage".

Cooling or dipping operations: Consists in lowering the temperature of semi-processed or hot processed foods, holding temperatures by means of a heat extraction.

Heating operations: Consists in raising the temperature of food, before to its hot service and without the objective of transforming it, by means of the application of a source of heat or radiation. Other synonyms included in the literature are 'retermalization' or ‘hot regeneration'.

Distribution operations: The distribution consists of transporting the meals from the kitchen to other establishments or different places and in the return of the containers used when they are returned to the kitchen.

Table 50 Hazard Analysis and Critical Control Points

Stage	Danger	Preventive measure	CCP*	Measures
Reception	1. Microbiological Infections 2. Physical Dirt, inappropriate temperatures, living organisms 3. Chemical Organoleptic characteristics	a) Approved suppliers (1,3) b) Visual inspection (1,2)	No	No
Washed	1. Microbiological Contaminated water 2. Chemical Contaminated water	a) Water control plan (1,2)	No	No
Storage	1. Microbiological 2. Physical Inadequate temperature, living organisms	a) Hygiene plan (1) b) Plan against pests (2) c) Equipment maintenance plan (2)	No	No
Thawing	1. Physical Inadequate temperatures	a) Equipment maintenance plan (2)	No	No
Prepared	1. Microbiological Cross contamination 2. Physical: Inadequate temperatures	a) Employees formation plan (1) b) Equipment maintenance plan (2)	No	No
Cooking	1. Microbiological Contamination by equipment or water 2. Physical Inadequate temperatures 3. Chemical	a) Water control plan (1,3) b) Equipment maintenance plan (2) c) Hygiene plan (1)	Yes	**Monitoring system:** Stantistical analisys time-temperature **Corrective masures:** Rejection

* Critical Control Point (CCP)

	Contaminated water			
Heat Maintenance	1. Physical Inadequate temperatures	a) Equipment maintenance plan (1)	Yes	**Monitoring system:** Stantistical analisys time-temperature **Corrective masures:** Rejection
Chilling	1. Microbiological Equipment Pollution 2. Physical Inadequate temperatures	a) Hygiene plan (1) b) Equipment maintenance plan (2)	Yes	**Monitoring system:** Stantistical analisys time-temperature Microbiological periodic control **Corrective masures:** Rejection
Refrigeration storage	1. Microbiological Recontamination for bad sealing of containers 2. Physical Inadequate temperatures	a) Buenas prácticas de manipulación (1) b) Employees formation plan (1) c) Equipment maintenance plan (2)	Yes	**Monitoring system:** Stantistical analisys time-temperature Visual inspection **Corrective masures:** Rejection
Regenerate	1. Microbiological Cross contamination 2: Physicists Inadequate temperatures 3. Chemical Cross-contamination of allergens	a) Hangling good practices (1, 3) b) Employees formation plan (1, 3) c) Equipment maintenance plan (2)	No	No
Tray preparation	1. Microbiological Contaminated trays 2: Physicists Poor trays, inadequate temperatures 3. Chemical Tray Metals	a) Approved suppliers (1,2,3) b) Maintenance and calibration of equipment (1,2,3) c) Hygiene plan (1)	Yes	**Monitoring system:** Stantistical analisys time-temperature Visual inspection **Corrective masures:** Rejection
Expedition	1. Physical Inadequate temperatures 2.Microbiological Opening of containers.	a) Transport control plan	Yes	**Monitoring system:** Stantistical analysis Visual inspection **Corrective masures:** Rejection

3.6 CRITICAL LIMITS

In order to be able to correctly follow the CCPs, a critical limit, maximum and minimum, must be established for each of the danger factors.

3.6.1 REFRIGERATION STORAGE CRITICAL LIMITS

It establishes the maximum and minimum temperature accepted during the refrigeration process. A variation of 0.5 ° C is permitted as long as it does not exceed 10 hours.

- Minimum temperature: 3ºC
- Maximum temperature: 5ºC

3.6.1 HEAT STORAGE CRITICAL LIMITS

It establishes the maximum and minimum temperature accepted during the process of heat storage. A variation of 0.5 ° C is permittedas long as it does not exceed 30 minutes.

- Minimum temperature: 70ºC
- Maximum temperature: 90ºC

3.6.3 CLEANING CRITICAL LIMITS

This cleaning will be carried out by a properly trained and qualified team, the company will ensure that all employees have the food handler license and is subjected to an objective test every six months. The cleaning products used will be suitable for a fight against microorganisms that may affect our product such as:

- *Salmonella spp.,* which may be present in carcassnof cattle, sheep, swine and especially birds.
- *Escherichia coli* O157/H7, present in the intestine of cattle, can contaminate carcass.
- *Campylobacter jejuni,* whose incidence in the carcass of different species has shown superior even to those of Salmonella in the last years.
- *Yersinia enterocolitica,* present in the intestine, tongue and tonsils of pigs mainly.
- *Staphylococcus aureus*, which may come either from the integuments of animals or from the operators themselves. However, this second case is the most dangerous, since strains of human origin, which can contaminate processed foods, show a greater capacity for toxin formation.
- *Listeria monocytogenes*, can contaminate the meat at its source, but it can also reach meat products in the form of cross contaminations from raw products during processing or even during their stay in the refrigeration chambers.
- *Clostridium botulinum*, can also contaminate fresh meat at its source, although most cases of botulinum intoxication are produced by consuming raw, homemade meat products.

3.7 MONITORING SYSTEM

In order to verify compliance with critical limits, stringent measures are taken for each of the existing hazards. They are essential to take the corrective measure itself.

3.7.1 REFRIGERATION AND HEAT STORAGE CCP

The adopted measure corresponds to a statistical analysis of digitized time and temperatures. Data will be digitally stored for one year. At the time that the critical limits are violated, appropriate corrective measures will be taken.

3.7.2 CLEANING CCP

Weekly Microbiological checks will be carried out by an external company of samples taken at random from food, to verify the margins imposed by the legislation.

3.8 CORRECTING MEASURES

When dealing with food, any failure in the process can cause unwanted results in the clients in the form of allergy, intoxications or infections. For this reason, in case of any anomaly or non-compliance with the critical limits, food that has been exposed to these conditions will be discarded in order to guarantee health of the customers.

The existing problem must be solved in the shortest possible time so that the productive cycle does not cease or, if necessary, interrupt the shortest possible time.

4 QUALITY VERIFICATION

With the aim of guaranteeing quality in the product, internal and external audits will be performed as follows.

Table 51 Characteristis of the audits

	Internal audit	**External audit**
Location	Own company	External company
Purpose	Verify the proper functioning of HACCP as internal improvement.	Issue a certificate after the evaluation of the sanitary HACCP
Implications in unfavorable case.	Preventive or corrective actions	Non-granting of certifications, including interruption of service if required.
Auditor	Qualified auditor of the company	Qualified auditor of an external company.

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CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

ANNEX 8: BUSINESS PLAN

Presented by
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June 2017

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TABLE OF CONTENTS: ANNEX 8

1 INTRODUCTION

The purpose of this document is to plan the marketing of the catering service carried out by a Special Employment Center. For this, the tools necessary for correct programming are presented in different sections of the report.

The catering companies have as objective the provision of catering service and other related services. There is a wide variety of food provision services, such as social, corporate or event catering. The company would offer its services mainly to clients in Navarre.

However, the objective of this study will be the catering service to communities such as Special Employment Center, that is, at least 70% of workers should be disabled.

2 BUSINESS PLAN

2.1 ANALYSIS AND DIAGNOSIS OF THE MARKET SITUATION

The objective of this sector is providing food ready for events, as well as other types of catering, such as catering to schools, hospitals and companies. This service would not be possible without the presence of two main players, supply and demand. Both parts are described below.

The situation of the supply in Navarra is quite numerous, since there are forty companies dedicated to this task. However it is true that the concentration of business is high, since few companies monopolize a large part of the market. Some of its main competitors are: Jangarria, Gourmet Food or Serunion.

In terms of demand, the customers of this service are collectivities; schools, companies, hospitals... The service is mainly offered in Navarre, although the door is not closed to nearby provinces.

3 SWOT ANALYSIS

Below is a SWOT diagram of the catering service, which shows the strengths and weaknesses both of the future Special Center for Employment (Weaknesses and Strengths) and external to it (Threats and Opportunities).

	HELPFULL	HARMFUL
INTERNAL SOURCE	STRENGTHS	WEAKNESSES
EXTERNAL SOURCE	OPPORTUNITIES	THREATS

Figure 17 Theorical SWOT analysis

	STREGTHS	WEAKNESSES
INTERNAL SOURCE	Social image Individualized care of employees	Lack of experience There are no facilities Great investment
EXTERNAL SOURCE	High demand Biddings for being Special Employment Center Support from public institutions	Leading competition in the sector, there are large groups rooted in.

Figure 18 Practical SWOT analysis

4 OBJECTIVES

In this section it is identified the target customer segments and the market shares that we want to achieve with that product. In the first place it is convenient to know the definition of segmenting; identifying homogenous groups of people according to their characteristics and in order to classify the clients in them.

There are several types of customer segmentations, this document will focus on targeting, whithin it, strategic and tactical are distinguished. The first one answers the questions what types of customers have we, and what strategy can we follow with each type. For this, an intensive analysis of the customers and their characteristics is carried out.

In the catering service the clients are not going to be individual, but correspond with groups of people, consequently it is necessary looking for common characteristics to these congregations.

The criteria used for the customer division are three. First, the general form of segmentation of markets, in which it is divided into consumer markets, corporate and institutional markets. Another criterion is the demographic, and the geographical one.

The catering service studied would fit into the corporate and institutional market. In the demographic criterion, the following parameters are defined:

- Age group: Children, adults, the elderly.
- Diets: Normalized, allergies and intolerances, special needs.
- Income level: Low, medium and high
- Profession: Officials, students, company workers.

Lastly, the geographical criteria corresponds with the Community of Navarre, with the possibility of expanding to neighboring communities, in the future.

With regard to market share, the medium-term objective is expected to reach 2%. It is not intended to become market leaders, but first to consolidate the bases of production and retention of small customers, in the future to grow and hoard stronger customers.

5 MARKETING STRATEGY

5.1 PRODUCT STRATEGY

The product is the good or service that is offered or sold to consumers. In this area of collective catering it is difficult to differentiate and incorporate novel marketing strategies, as it is a very standardized service, with room for few modifications. This is why the whole strategy will be focused on a single tactic. Through the employability of people with disabilities, the product acquires new characteristics, attributes and benefits. This is why it differs from the rest of the market.

5.2 DISTRIBUTION STRATEGY

Distribution refers to the places or points of sale where the product is offered or sold to consumers, as well as the way it is distributed or transferred to such places or points of sale.

In this case, the distribution does not play any transcendental role, since by definition of the service, the food must be delivered in the place where it is going to be consumed.

There are two types of service, cold line and hot line. In the first one the food must be heated in the place where it is going to consume. In the second the food is delivered ready to eat. The hot line will be chosen, except in the case of different and individual diets that will be delivered in heat-sealed containers in cold line.

5.3 PRICING

The price is the monetary value assigned to the product at the time of offering or selling it to consumers. In the case of catering, two different strategies will be taken into account depending on the consumer.

A similar price to that of the competition will be adopted, since in this field price differences are minimal, and a high price does not capture the attention of the public.

5.4 COMMUNICATION STRATEGY

The promotion or communication consists in informing or reminding the existence of the product to consumers, as well as persuading, stimulating or motivating their purchase, consumption or use. As it is a direct service to companies and institutions, the communication will be direct with the entities themselves.

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ANNEX 9: SPECIAL EMPLOYMENT CENTER

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TABLE OF CONTENTS: ANNEX 9

1 INTRODUCTION

Work experience is key to personal development. In the case of people with disabilities, both physical and intellectual, work plays a vital role in their social inclusion. Likewise, the employment of people with disabilities brings a benefit not only social, but also economic and business.

María Jesús Álvarez Urricelqui, PhD in Psychology, mentions in her book "The evolution of employment of people with intellectual disabilities in Navarra" (2009, p.13):

"Work activity is one of the keys that make possible the social integration of all people. It is a very important step in adult life, key to achieving economic independence and even to increase self-esteem, to feel useful, to know that it is contributed to the society of which it forms part. In Western society, the profession occupies a large part of life, confers identity and regulates the organization of time, training, relationships. As Alfredo Fierro mentioned in 1977:

> *"Modern society is based on work and the social division of labor. The public meaning of a man's life is given by his job: the position he plays and the way in which he performs it. The social image of a person is, thus, socially related to the significant work that he performs ... It is in this way that happens that work makes the man."*"

However, the creation of a Special Employment Center is an opportunity to undertake an economic activity, while contributing to social integration, in order to cooperate to move forward together as a society.

2 SPECIAL EMPLOYMENT CENTER DESCRIPTION

Law 13/1982, of 7 April, on social integration of disabled people (LISMI), defines in its Article 42.1, Special Employment Centers (SEC) as:

"Those whose main objective is to perform productive work, participating regularly in the operations of the market, and having as purpose to ensure a paid employment and the provision of personal and social adjustment services required by their disabled workers; At the same time as a means of integrating the greatest number of Disabled persons into the normal working regime. "

An SEC can be created by Public Administrations (directly or in collaboration with other institutions), by private entities, by natural persons, legal entities or communities of goods that have legal capacity and act as entrepreneurs. Consequently an SEC can be public or private. Another possible distinction is between whether or not for profit, the latter are also called Social Initiative, in them all benefits are reinvested in the social mission.

The disabled workers of the Special Employment Centers are in one of the assumptions described below:

- Persons with cerebral palsy, people with mental illness or people with intellectual disabilities, with a recognized degree of disability equal or superior to 33%.
- Persons with physical or sensory disabilities, with a recognized degree of disability equal to or greater than 65%.

The Support Units for Professional Activity may also serve the disabled workers of the Special Employment Center not previously included, as long as the dedication to these

workers does not detract from those included in the previous section. *(Servicio Público de Empleo Estatal, 2017)*

2.1 REQUIREMENTS FOR THE CREATION OF A SEC

A special employment center is subject to the same rules and characteristics as a standardized company, in other words, working conditions (salary, hours ...) will be common for workers in both types of organizations. The following conditions are requirements for the creation of an SEC: *(LEIALTA, 2017)*

- At least 70% of the Special Employment Center staff must be made up of persons with a disability degree equal or superior to 33%.
- Its main purpose should be to ensure paid work for employees, as well as facilitate their insertion in the ordinary labor market.
- From the mercantile point of view, the Special Employment Centers are considered companies.
- They must have the corresponding Personal and Social Adjustment Services, which support the workers in the process of adaptation to the job, in the evolution of their professional development and in the consolidation of the same.
- Due respect and consideration for employees with disabilities.
- Protection of their personal and professional dignity.
- Likeness in the organization and working methods, compared to the ordinary company, if the personal and professional conditions of the employees allow it, to favor the transit to other standard companies.
- Special relevance in the application of current legislation on health and safety at work.

3 DEFINITION AND CLASSIFICATION

Disability plays a leading role in the Special Employment Centers. Therefore,it is necessary to know some classifications of the different disabilities. The following chapter explains how different disabilities are classified worldwide, according to WHO, and at the national level, according to Spanish legislation.

According to the World Health Organization (WHO), disability refers to any loss or abnormality, permanent or temporary, of a psychological, physiological or anatomical structure or function.

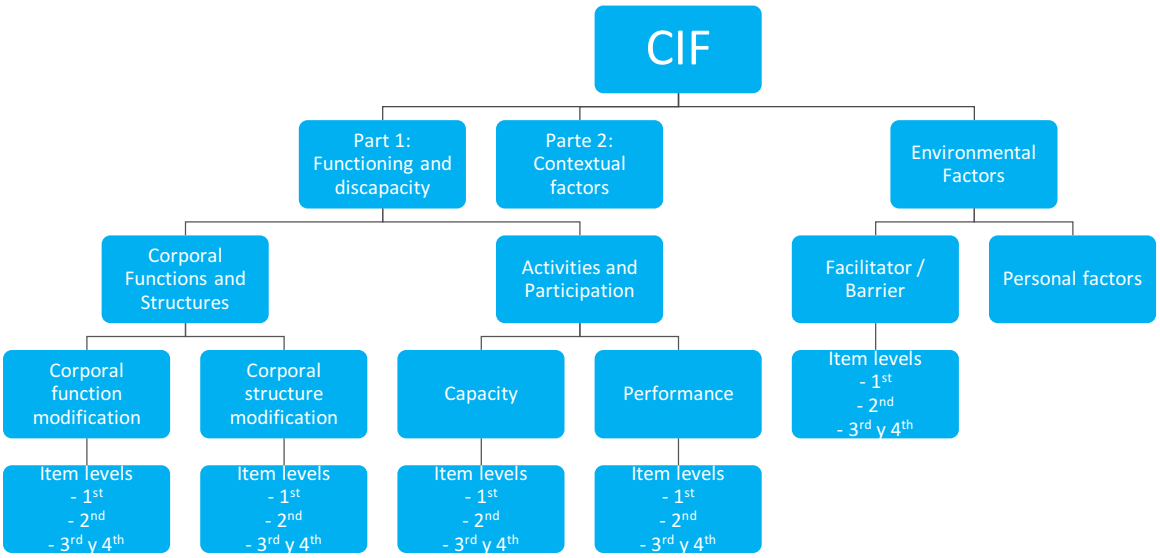
This definition covers a wide range of cases, so the degree of disability defines more objectively how the disability affects the autonomy of a person, in order to make available the necessary tools and aids.

3.1 CLASSIFICATION OF DISABILITIES ACCORDING TO WHO

According to WHO, disability is classified according to what is written in the document *"The International Classification of Functioning, Disability and Health",* also known by its acronym CIF, which indicates that it is organized in a hierarchical scheme taking into account the following taxonomic principles:

- *The components of Functions and Body Structures, Activities and Participation and Environmental Factors are classified independently. Therefore, a term included in one of these components must not be repeated in another.*
- *Within each component, the categories are organized following an arboristic scheme so that a lower level category shares the attributes of the higher level categories to which it belongs.*
- *Categories are meant to be mutually exclusive, for example, there are no two categories located in the same level that share exactly the same attributes. However, this should not be confused with the use of more than one category to classify a person's functioning. This practice is permitted, in fact advised, when necessary.*

In order to understand its classification globally it is important to understand its structure,reflected in the following scheme.



Figuea 19 CIF structure

The CIF relates each hierarchical level to a term. In this way the Parts of the classification are its two major subdivisions:

- Part 1: Functioning and disabled
- Part 2: Contextual Factors

The subdivisions of the Parties are called Components. Part 1 consists of the following components:

- Corporal Functions (*b*) and Structures (*s*)
- Activities and Participation(*d*)

Part 2 consists of the following components:

- Environmental factors (*e*)
- Personal factors

Likewise the Constructs are defined through the use of qualifiers, and correspond to the lowest level of the hierarchy. Each component is assigned different Constructs.

3.1.1 CODE

The code consists of the indicator letter and a numeric code. The first digit is the chapter number, then two digits refer to the second level descriptor and finally the third and fourth level descriptors.

The components are differentiated by the use of prefixes indicated in parentheses in the previous section. The prefix “p” could be replaced by the prefix “a” (Activities) or “p” (Participation) at the user's choice. For example, in the classification of corporal functions these codes can be used:

b2	Sensory functions and pain	(first level item)
b210	Visual functions	(second level item)
b2102	Quality of vision	(third level item)
b21022	Contrast sensitivity	(fourth level item)

To describe the general state of a person, more than one code may be used at each level, which may be independent or related to each other. There are many descriptive codes depending on the level to which they correspond: 34 at chapter level, 362 at second level and up to 1.424 at third and fourth levels.

To indicate the magnitude of the health level or severity of the problem, the Qualifiers are used. The use of any code must be accompanied by at least one qualifier. Without these, a code does not make sense. In this way, a terminology is assigned referring to each qualifier, which must be used properly:

xxx.0 NO problem	(none, insignificant)	0-4 %
xxx.1 LIGHT problem	(little, low)	5-24 %
xxx.2 MODERATE problem	(medium, regular)	25-49 %
xxx.3 SERIOUS problem	(much, extrem)	50-95 %
xxx.4 COMPLETE problem	(total)	96-100 %
xxx.8 Not specified		
xxx.9 Not applicable		

Broad intervals are assigned to each qualifier for those cases where standards or calibrated instruments of assessment are available to quantify deficiency, capacity limitation, or performance problem. The percentages should be calibrated in different domains and with reference to the norms or percentiles of the population. Therefore each case must be studied individually.

For more detailed information on coding see the International Classification of Functioning, Disability and Health, published by WHO, on which this section of the annex has been based.

3.2 CLASSIFICATION IN ACCORDANCE WITH SPANISH LEGISLATION.

Legally speaking, in Spain the procedure for the recognition, declaration and qualification of the degree of disability is included in Royal Decree 1971/1999. The process for assigning the degree of disability begins in the Public Administration, setting technical criteria. These principles value both the disability of a person and the social factors that may hinder their social integration.

The Valuation and Orientation Teams (VOT), composed by a doctor, a psychologist and a social worker, are responsible for making a physical, psychic and sensory assessment of the person.

One of the methods used to determine the degree is the Barthel Index, a generic measure that assesses the level of independence of a person with respect to performing some basic activities of daily living (ADL), the time invested in them and if the person needs help. The AVDs that are included in the original index are ten:

- Eat
- Personal cleanliness
- Use of the toilet
- Take a bath or take a shower
- Move between the chair and the bed
- Up and down stairs
- Dressing and undressing
- Stool control
- Urine control
- Move (smooth surface or wheelchair)

Finally, Social Services of each autonomous community certify the degree of disability and determine the periodic review necessary in all cases.

In order to recognize the condition of disability and to be able to use their rights, it is necessary to accredit at least 33% of disability. The table below shows the grades, symptoms and percentages.

Table 52 Grades, symptoms an percentajes of diasability

Grade of disability	**Symptoms, signs or aftermaths**	**Class and percentage**
Grade 1 Null disability	Minimal, the deficiency does not limit the realization of Activities of Daily Life (ADL).	Class I 0%
Grade 2 Mild disability	Some difficulties to carry out the ADL, but are compatible with the practice in all of them.	Class II de 1 a 24%
Grade 3 Moderate disability	Significant decrease or impossibility of person's ability to perform some of ADLs, being independent in the ones of self-care.	Class III De 25 a 49%
Grade 4 Serious disability	Significant decrease or inability to perform most of the ADLs, and some of self-care may be affected.	Class IV De 50 a 70%
Grade 5 Really serious disability	Impossibility to perform ADL	Class V Dependence of other people to perform essential activities of daily living, demonstrated by obtaining 15 points or more in the specific scale 75%.

3 REASSONS TO CREATE A SPECIAL EMPLOYMENT CENTER

There is no doubt that the initiation of a special employment center is a social task that contributes positively to society. However, the economic component of this project can not be ignored. As it is a business activity, it has to be economically viable over time. In addition face to businessman, a special employment center brings numerous competitive advantages.

Therefore, from the social, business and economic point of view, some of the reasons for creating an SEC are presented below.

3.1 SOCIAL PERSPECTIVE

It is the main reason why these centers exist. This companies are initiatives created for people, and they are the real protagonists. As any other firm the economic viability must be unwavering, however the integration of people is the fundamental axis in this type of business. This is reflected, for example, in the mission of Tasubinsa, SEC spread throughout Navarre.

> *"Achieving full labor and social integration of all people with intellectual disabilities in Navarre, providing a service that promotes their personal and social growth."(Tasubinsa, 2017)*

When talking about people with discapacity, usually we focus on the individuals, however their families play a really important role. This people need special aids and more attention, some cases they need even a person continuously taking care of them. Their parents, broders and sisters realize often this work. It is important for them, having some time of disconnection.

Employees of a special employment center spend eight hours a day in their labor. This time provides their social environment, specially their family, really valious time in order to disconect and to get ready to do their best when the employees get home.

3.2 BUSINESS PERSPECTIVE

From the business point of view, it may seem that the creation of an SEC is an expensive, complicated and long process, however, there are many advantages for the company image.

First, it ensures compliance with the legislation Royal Legislative Decree 1/2013, of November 29, approving the Consolidated Text of the General Law on the rights of persons with disabilities and their social inclusion. It stipulates that from 50 workers on staff, 2 % must be persons with disabilities.

To legally comply, every company with more than 50 employees has three possibilities:

Hire as employees of the company.

- Alternative measures. That is, to hire external companies as complementary services (cleaning, gardening ...).
- Make an economic donation equivalent to the cost of these people for the company. This amount amounts to 19.170,39 € for each disable employee not hired.

In this context, relationships are established not only with other companies, for example by offering the cleaning service or gardening, but with public institutions since this type

of initiatives are always favored and supported by municipalities. There are public tenders reserved for the SECs, addressing new market niches.

In addition, these initiatives are nowadays pioneering projects, so they generate an innovative perception in the customer's view. Consequently the corporate image of the organization is reinforced.

3.3 ECONOMIC PERSPECTIVE

As mentioned in the Ministry of Employment and Social Security (2017):

1. In order to partially finance employment-generating projects (creation or expansion of centers, Ministerial Order of 16 October 1998).

Subsidies of:

- **12.020,24 euros** per job created on a stable basis, if the SEC exceeds 90 per cent of workers with disabilities compared to the total workforce.
- **9.015,18 euros** per job created on a stable basis, if the number of disabled workers in the SEC is between 70% and 90% of the total workforce.

Previous grants may be granted as long as the special employment center justifies adequately the investment of the project for any of the following actions:

- Subsidy for technical assistance (feasibility studies, audits ...).
- Partial subsidy of interest of loans of up to 3 points of interest.
- Subsidy for fixed investment in projects of recognized social interest.

2. Support for the maintenance of jobs in the SEC (Ministerial Order of 16 October 1998).

The aids for the maintenance of jobs in Special Employment Centers, consist of:

- Bonus of 100% of the corporate contribution to Social Security, including occupational accidents and occupational diseases and joint collection fees.
- Subsidies of the salary cost for 50% of the interprofessional minimum wage. In the case of a part-time contract, the subsidy will be reduced proportionally to the working day.
- Subsidies for adaptation of jobs and removal of architectural barriers in an amount not exceeding 1.803,04 euros per job.
- One-time grant to balance and provide financial support to special employment centers.
- Subsidy aimed at balancing the budget of those special employment centers that are not for profit and of public utility and indispensability.
- Special Employment Centers may receive technical assistance for the maintenance of jobs, and may be granted when the study of the file so demands.

3. Assistance for the Support Units for Professional Activity (R.D. 469/2006, of April 21).

Support Units for activity are known as multiprofessional teams of the Special Employment Centers, which, through the development of different functions and tasks, help to overcome obstacles, barriers or difficulties that workers with disabilities have in the process of joining a job, as well as when performing the same.

3.4 SOCIAL RETURN ON INVESTMENTS

The Social Return of Investments (SROI) measures the global impact of any activity. Shows how it creates value in the social, labor and economic fields, in relation to each euro invested.

The following chart is a study carried out by Tasubinsa, Gureak Group and the Association of Employment Centers of Navarra (ACEMNA), in which it is justified that for each euro invested by the Public Administrations in the Special Employment Center (via subsidies of salary costs, social security bonuses, investment aid and subsidies for support units), the SEC is able to return to society with its activity 3,94 €.

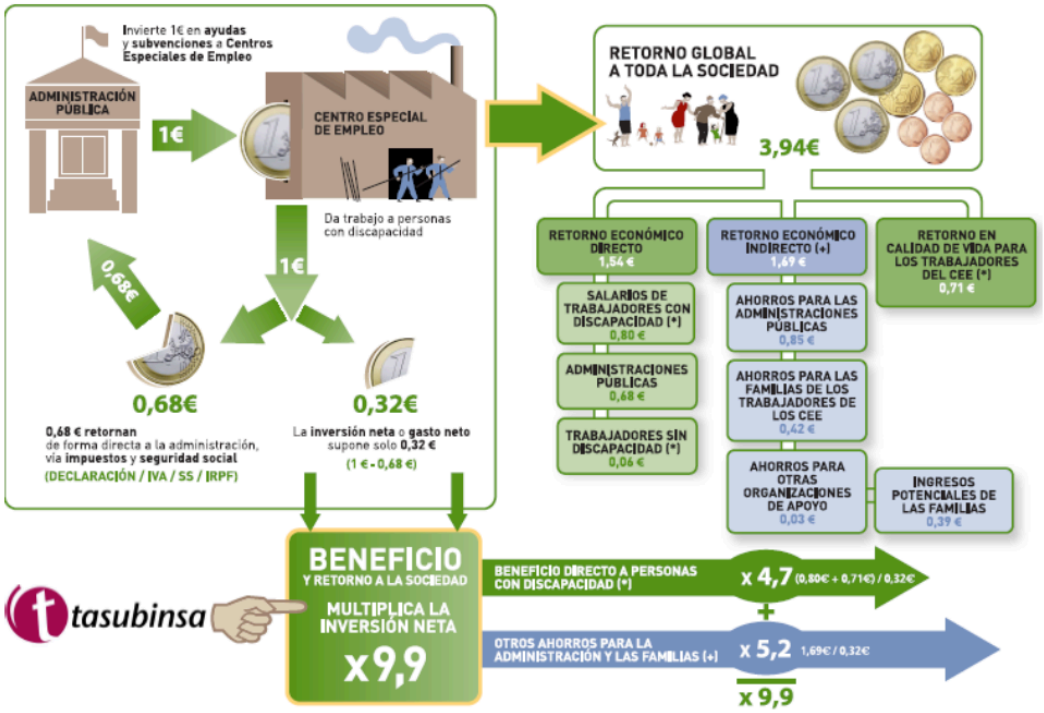


Figure 20 Social Return on Investment in a Special Employmetn Center of social initiative (Tasubinsa, 2017)

The net investment of the subsidy (0.32 €) produces an amount calculated as direct benefit 4,7 times higher (1,51 €) than the initial figure. It is considered direct benefit to people with disabilities only the salaries of workers with disabilities and the return in quality of life of employees of the SEC.

In addition, taking into account other savings for the administration and the families, which is 5,2 times greater than the initial number, the benefit and return to society multiplies by 9,9 the net investment.

In this way it is observed that an SEC is profitable not only for the company itself, but also for the Public Administration.

4 EMPLOYMENT SITUATION OF PEOPLE WITH DISCAPACITY IN NAVARRE

4.1 PEOPLE WITH DISCAPACITY IN NAVARRE

Once the reasons about why creating a SEC are known, a brief summary of the situation of people with disabilities in Navarra is given below. It is a matter of contextualizing and knowing significant figures of the main framework by which this project is created. Data

of the Government of Navarra, through the observatory department of the social reality, the Foral Community in the year 2014.

Table 53 Data about people with discapcity in Navarre in 2014 (Sección de Información Y Modernización de Departamento de Derechos sociales. 2017)

Type of discapacity

Group	No. persons
Hearing impairment	2.230
Expressive deficiencies	228
Visual deficiencies	2.742
Chronic disease	5.138
Mixed	15
Neuromuscular	4.157
Osteoarticular	7.094
Other	28
Mental retardation	3.969
Mental disorder	5.566
Total	**31.167**

Gender distribution

Gender	No. persons
Male	17.345
Female	13.822
Total	**31.167**

By grade of discapacity

Grade of discapacity	No. persons
By court order	2
33-45%	13.034
46-65%	5.575
66-75%	7.192
+75%	5.364
Total	**31.167**

Distribución por edad

Edad	No. persons
0-18 años	1.337
19-30 años	1.671
31-45 años	3.996
46-65 años	9.927
66-75 años	6.033
+ 75 años	8.203
Total	**31.167**

Note: It shows people recorded in Navarra who, in 12/31/2014, have a disability rating equal to or greater than 33%. It also includes those persons whose recognition of total or absolute incapacity for work has been approved for disability, and those who have obtained recognition by judicial decision.

In 2014 Navarre had 640.790 inhabitants, from the previous table it is extracted that in that same year 31.167 people had a disability superior to 33%, that is 4.86%. Almost five percent of the foral residents were limited in routine tasks.

The way I see it, this number is not small. As engineers we must propose processes and facilities for 100% of the population, without excluding groups, for whatever reason. Thus, the present project designs an industrial kitchen in which the labor priority will be assigned to this collective, so present but at the same time so little known by society.

4.2 SEC IN NAVARRE

Nowadays there are seventeen Special Employment Centers in Navarre, according to the following table published by the Government of Navarra. It shows the work activity related to each of the companies.

Table 54 Special employment centers in Navarre in 2017 (CREENA, 2017)

Special employment center	Work activity
MIMET-CANRASO	Logistics Bearing assembly and packing Binding Classification of electronic components
ASOCIACION DISMINUIDOS FÍSICOS Y PSÍQUICOS DE CORELLA	Manufacture of candles Concierge and cleaning
ASOCIACIÓN NAVARRA SIN FRONTERAS - ALBERNIA	Industrial assemblies
ASOCIACIÓN TELE TAXI SAN FERMÍN	Phone call support
CENTRO DE NEGOCIOS OCON, S.L.	Packaging and correspondence
DYA SERVICIOS DISCAPACITADOS, S.L.	Phone call support Cleaning
ELKARKIDE, S.L.	Handling and packaging Gardening Mailboxing Minor masonry works Vehicle garage
ESTACION DE SERVICIO LASTAI, S.L.	Gas station, catering
FEVIMAX-LOGISTICA, S.L.	Assembly of electrical components Cutting of metal parts Handled and bagged
FUNDACION ASPACE NAVARRA PARA EL EMPLEO	Hostel management Industrial laundry Waste management plant management
FUNDACION BIDEAN LABORAL	Auxiliary activities in the graphic arts sector Industrial and manipulated assemblies Cleaning and maintenance
FUNDOSA GALENAS, S.A.U.	Retail trade
GRUPO SIFU NAVARRA, S.L.	Cleaning Auxiliary services Environmental Services Consultancy
GUREAK NAVARRA, S.L.U.	Industrial Division Services Division Marketing and communication division
LAVANDERIAS INDUSTRIALES LAVANOR, S.L.	Industrial laundry
TASUBIN, S.A.	Plastic injection Manufacture of electrical appliances Assembly and manipulation Industrial laundry Cleaning, gardening and integral services
TELIZSA, S.L.	Cleaning

It is observed that the most repeated activity by the centers is service, since it is a work that, in general, can be done by this type of workers. In addition, this analysis shows a new market niche for people with disabilities in Navarra: Catering for communities.

As previously mentioned, work activity is one of the keys that make possible the social integration of all people. Hence, one of targets of all of as as society should be to facilitate jobs to people with disabilities. Working in kitchen is a nice job that, supervised by the corresponding monitors, can be done by people with different capacities. For all these reasons, and with the final intention of carrying out a social activity with economic profit, this central kitchen is designed as Special Employment Center.

5 CENTRAL KITCHEN AS SPECIAL EMPLOYMENT CENTER

5.1 MANAGEMENT OF A STANDARD CENTRAL KITCHEN

With the final aim of achieving an integral management of the kitchen with disabled staff, first is is necessary to know the direction of a standard kitchen, that is, one in which workers have no disability.

5.1.1 EMPLOYEES TEAM

The organization of a central kitchen resembles that of a factory. There is a hierarchy in which the inferior commands obey the superiors, delegating to a greater or lesser extent depending on the function and the person in charge of the management. Specialization of work in industrial kitchens is similar to that of an agri-food industry is allowed. The organization chart of the work team is as follows:

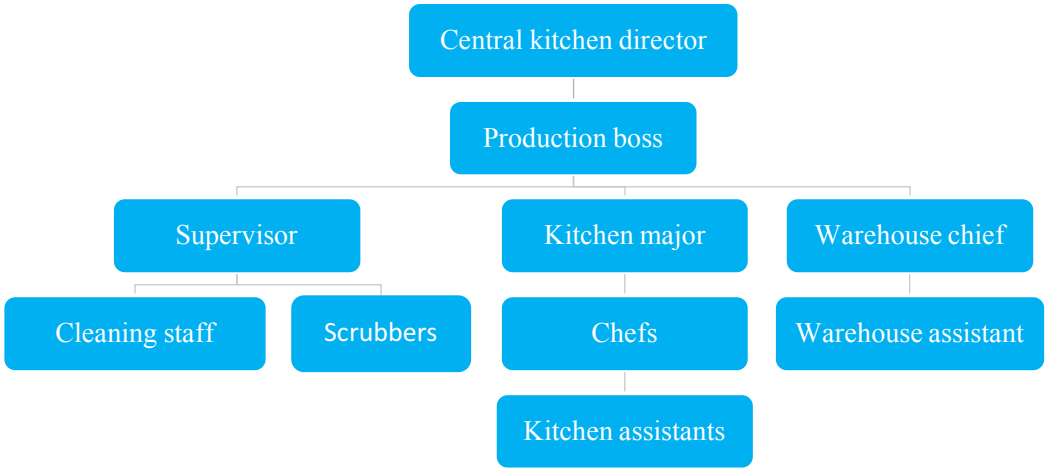


Figure 21 Organizational chart of the special employment center

Hereafter the functions of each job are detailed.

Central kitchen director

Responsible of the management of the kitchen. Performs management and strategic tasks. This profile corresponds with a company manager, who must know how to lead teams.

Production boss

It deals with the industrial organization and operation of the kitchen. Coordinates the kitchen major, supervisor and warehouse chief for a well functioning of both the

production of meals and staff. His training goes in the line of industrial organization as well as team management.

Supervisor

Assumes administrative duties, and supervises and organizes the cleaning of the plant. An administrative profile is sought, and with complementary knowledge to the production manager.

Cleaning staff

One of the most demanding positions talking about details. Food safety must be guaranteed throughout the production process, for this reason, the cleaning of all areas of the plant must be faultless. They will be in charge of the cleaning of the whole plant.

Scrubbers

They are in charge of the plonge, cleaning of containers and trays. Its work is the disinfection of all the material used in the kitchen, as well as the trays and dirty carts coming from the service.

Kitchen major

Provides sensibility,knowledge of the technique and the part of culinary culture, that technicians do not usually have. This chef will be little linked to the daily production, since he will be in charge of controlling the processes, the raw materials and the final product, in order to achieve always the expected results. He or she will also make the menus together with a nutritionist external of the company. In addition, will have to take care of the part of investigation that corresponds to this figure: search of new raw materials, improvement of yields, review of datasheets ...

Chefs

They assume the daily tasks of cooking. They follow the planning to elaborate the corresponding diets. They also coordinate kitchen assistants to ensure food safety and the final quality of the food.

Kitchen assistants

They perform the tasks set by the hef. Also other tasks of conditioning raw materials, such as cleaning vegetables, or cutting meat. No experience is required, rather willingness to work and ability to follow orders.

Warehouse chief

Deals with the warehouse, both dry and refrigerated. It is in charge of the reception of the products and the purchase of the necessary raw materials so that there is no shortage or expiration of food. Must work together with the chef to know necessary supplies in the warehouse.

Warehouse assistant

Performs the tasks ordered by the warehouse manager. For example, recording of temperatures in the reception of the raw material, movement of products ...

Employees of a standard kitchen

The number of workers required to meet 4,000 menus per day in a standard kitchen is counted bellow. For the calculation it is contemplated that up to three different menus can be made at the same time. Each chef has three kitchen assistants, leaving two free to do

work to prepare raw material, or if necessary, reinforcement in the realization of the menu. The number of workers is 24.

Table 55 Staff of a standard kitchen

Job	No. employees	Job	No. employees
Director	1	Cleaning staff	2
Production boss	1	Scrubber	2
Supervisor	1	Chef	3
Kitchen major	1	Warehouse assistant	1
Warehouse chief	1	Kitchen assistant	11

The work in the kitchen becomes the daily contribution of all the professionals who make up this multidisciplinary team in which science, technology and culinary art are joined. Each employee must specialize in their task, learn from their peers, listen to their proposals and offer solutions. It is an enriching work that, working all in the same direction, generates visible economical and social results.

5.1.2 SALARIES

The salaries according to each post are shown in the following table, the economic number corresponds with monthly data od the hostelery agreement in Navarre in 2017.

Table 56 Salaries of each job

Job	Salary (€)	Job	Salary (€)
Director	2.143,32	Cleaning staff	750,05
Production boss	1.353,68	Scrubber	750,05
Supervisor	1.353,68	Chef	1.042,83
Kitchen major	1.353,68	Warehouse assistant	1.006,18
Warehouse chief	1.042,83	Kitchen assistant	1.006,18

5.2 MANAGEMENT OF THE CENTRAL KITCHEN AS SPECIAL EMPLOYMENT CENTER

Once known the management of a standard kitchen, the organization of a kitchen as Special Employment Center is described bellow.

5.2.1 EMPLOYEES TEAM

One of the essential requirements to be a special employment center is that at least 70% of the employees are persons with an accredited disability. This is the reason why the main goal of the kitchen will be to incorporate as many disable people as possible.

When designing the job profile, the following hierarchy will always be followed.

1. Intelectual disable person
2. Physical disable person
3. Non disable person

If a position can be occupied by people of the first level, the appropriate profile will be searched, and the recruitment should follow this line. In organizational and management issues, people with physical disabilities will be sought. In short, it´s seeked to be coherent with the objective of this project, which is, facilitate the employability of this group of people.

Then the positions that can be occupied by people with intellectual disabilities are shown. The rest of positions can always be occupied by individuals with physical incapcities. However, although if there were a qualified physical disabled individual would have preference, part of the jobs will be assigned to people without disabilities, due to the difficulty of finding, for example, three people with physical disabilities with formation as chef.

The Support Units (SU), also called monitors, as explained previously is a figure in charge of monitoring and support workers, also they have to perform the tasks of the post if necessary.

In the kitchen will be established a ratio of 1:6, in other words, one SU per worker with intellectual disability. As a result, three AUs will be needed: two as kitchen assistants and one for cleaning staff and scrubbers. They will be people without disabilities, however they do not count among the 70% necessary to appear as SEC.

All in all, the final stencil of the kitchen is set as follows.

Table 57 SEC staff

Job	Number of employees	Intelectual disability	Physical disability	No disability
Director	1			1
Production boss	1			1
Supervisor	1		1	
Kitchen major	1		1	
Warehouse chief	1			1
Cleaning staff	2	2		
scrubber	2	2		
Chef	3		2	1
Warehouse assistant	1	x		
Kitchen assistant	11	x		
Support Unit	3			3
Total	**27**	**16**	**4**	**7**
Percentage (%)	**100**	**59**	**15**	**26**

In order to satisfy the conditions of a SEC in a workforce of 27 employees, a maximum of 8 persons without disability could be included. This table reflects the most unfavorable case, in which in several positions there were no persons with physical disabilities capable of performing the tasks of the position. Even so, the requirements are met, so that the kitchen would be categorized as a special employment center.

PUBLIC UNIVERSITY OF NAVARRE
SCHOOL OF AGRICULTURAL ENGINEERING

CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

DRAWINGS

Presented by
©Borja Sesma Telleria

Directors
Alberto Enrique Martín
María Jesús Vilas Carballo

June 2017

upna Universidad Pública de Navarra
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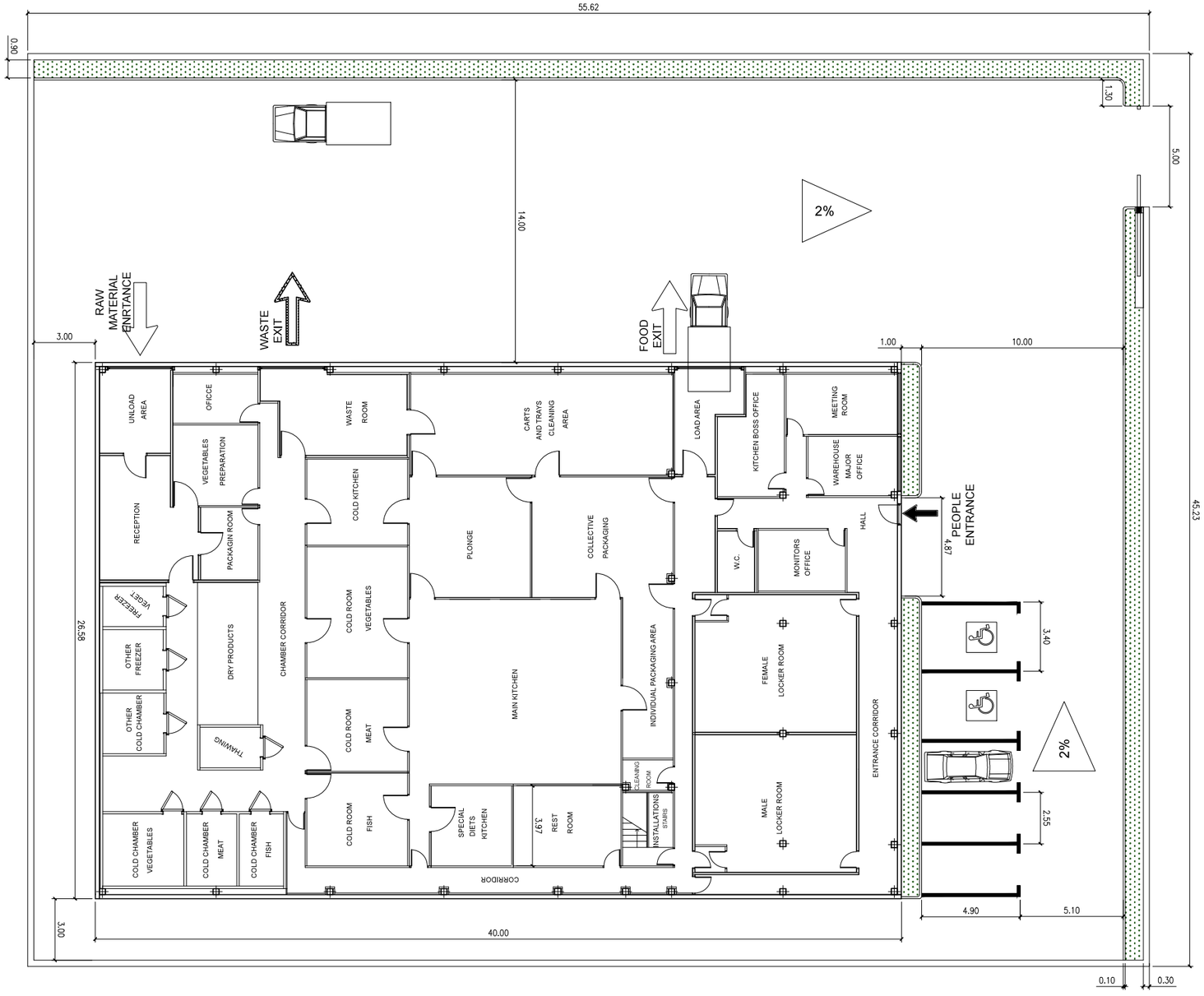
TABLE OF CONTENTS: DRAWINGS

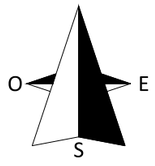


SURFACE RELATION

ZONE	SURFACE (m^2)
UNLOAD AREA	15.00
RECEPTION OF RAW MATERIALS	26.62
EMPTY PACKAGING ROOM	10.22
VEGETABLES PREPARATION	17.39
ARCHIVE OFFICE	10.29
FREEZER VEGETABLES	6.00
FREEZER OTHER FOOD	9.00
COLD CHAMBER FOR DAIRY AND OTHERS	9.09
COLD CHAMBER FOR VEGETABLES AND FRUITS	14.42
COLD CHAMBER FOR MEAT	9.00
COLD CHAMBER FOR FISH	7.87
THAWING	6.03
DRY FOOD WAREHOUSE	21.19
CHAMBER CORRIDOR	75.13
COLD ROOM FOR FISH	22.98
COLD ROOM FOR MEAT	22.69
COLD ROOM FOR VEGETABLES	22.57
COLD KITCHEN	21.25
WASTE ROOM	27.78
CARTS AND TRAYS CLEANING AREA	65.11
PLONGE	35.90
MAIN KITCHEN	95.60
SPECIAL DIET KITCHEN	15.79
REST ROOM	21.19
INSTALLATIONS STAIRS	9.17
CLEANING ROOM	3.47
CORRIDOR	50.34
INDIVIDUAL PACKAGING AREA	19.70
COLLECTIVE PACKAGING AREA	41.60
LOAD ZONE	14.08
MALE LOCKER ROOM	54.83
FEMALE LOCKER ROOM	54.83
PEOPLE ENTRANCE CORRIDOR	36.20
HALL	24.48
MONITORS OFFICE	13.05
W.C.	5.54
KITCHEN MAJOR OFFICE	17.03
WAREHOUSE CHIEF OFFICE	12.69
MEETING ROOM	16.32
URBANIZATION	1453.26
TOTAL USEFUL SURFACE	961.44
TOTAL SURFACE BUILT	2515.80

CLARIFICATIONS

1. DIMENSIONS IN METERS (m).
2. GEOGRAPHICAL ORIENTATION COULD NOT BE THE SAME AS THE INDICATED ONE



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DATE: June 2017

DRAWINGS

AUTHOR: Borja Sesma Telleria

TECHNICAL REF.: Borja Sesma Telleria

PROJECT: CENTRAL KITCHEN DESIGN AS A SPECIAL EMPLOYMENT CENTER

TESTING: Mª Jesús Vilas Carballo
Alberto Enrique Martín

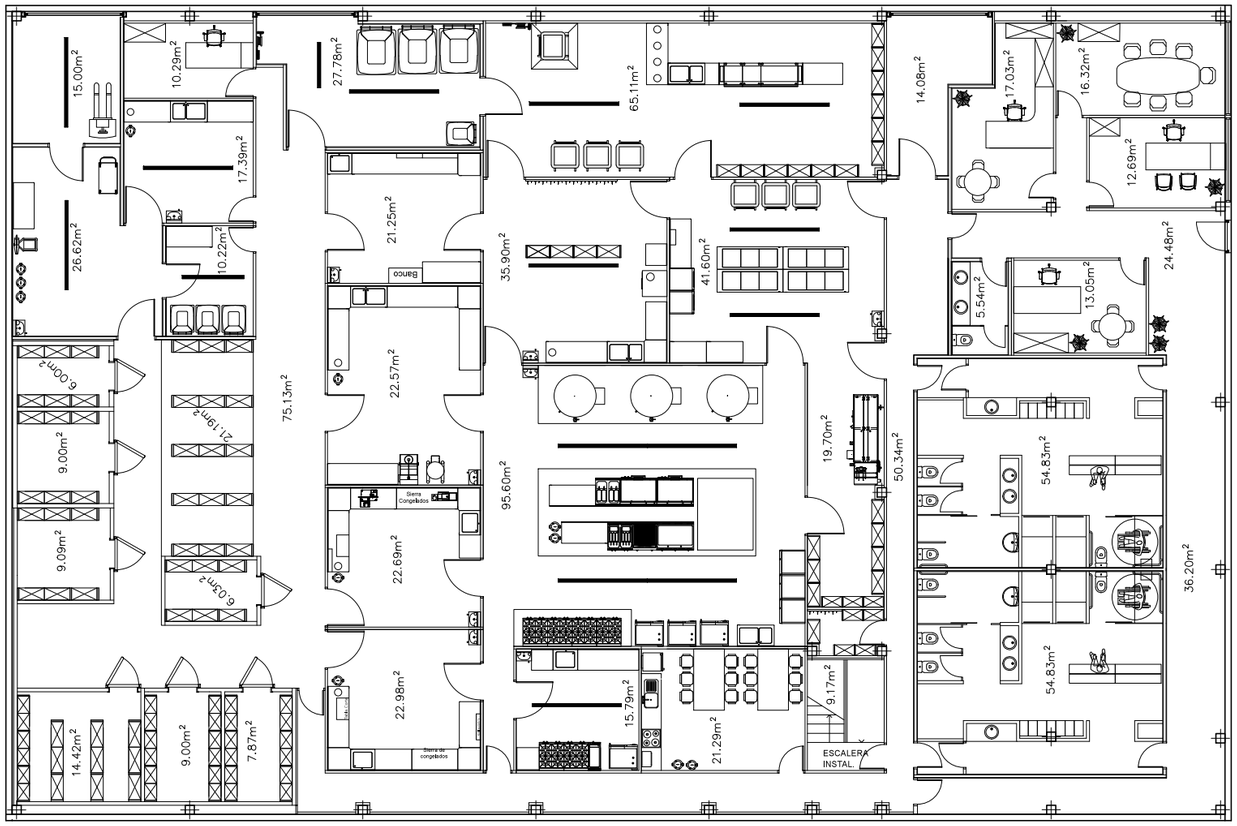
DESCRIPTION: GENERAL DRAWING

SCALE: 1/250

DRAWING NUMBER: 1 OF 7

DRAWING CODE: TFG_BST_P01

REV.: 01



SURFACE RELATION

ZONE	SURFACE (m^2)
UNLOAD AREA	15.00
RECEPTION OF RAW MATERIALS	26.62
EMPTY PACKAGING ROOM	10.22
VEGETABLES PREPARATION	17.39
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KITCHEN MAJOR OFFICE	17.03
WAREHOUSE CHIEF OFFICE	12.69
MEETING ROOM	16.32
TOTAL USEFUL SURFACE	961.44
TOTAL SURFACE BUILT	1062.54

CLARIFICATIONS

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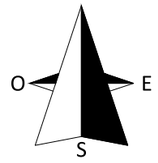

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DRAWINGS

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TECHNICAL REF.: Borja Sesma Telleria

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TESTING: Mª Jesús Vilas Carballo
Alberto Enrique Martín

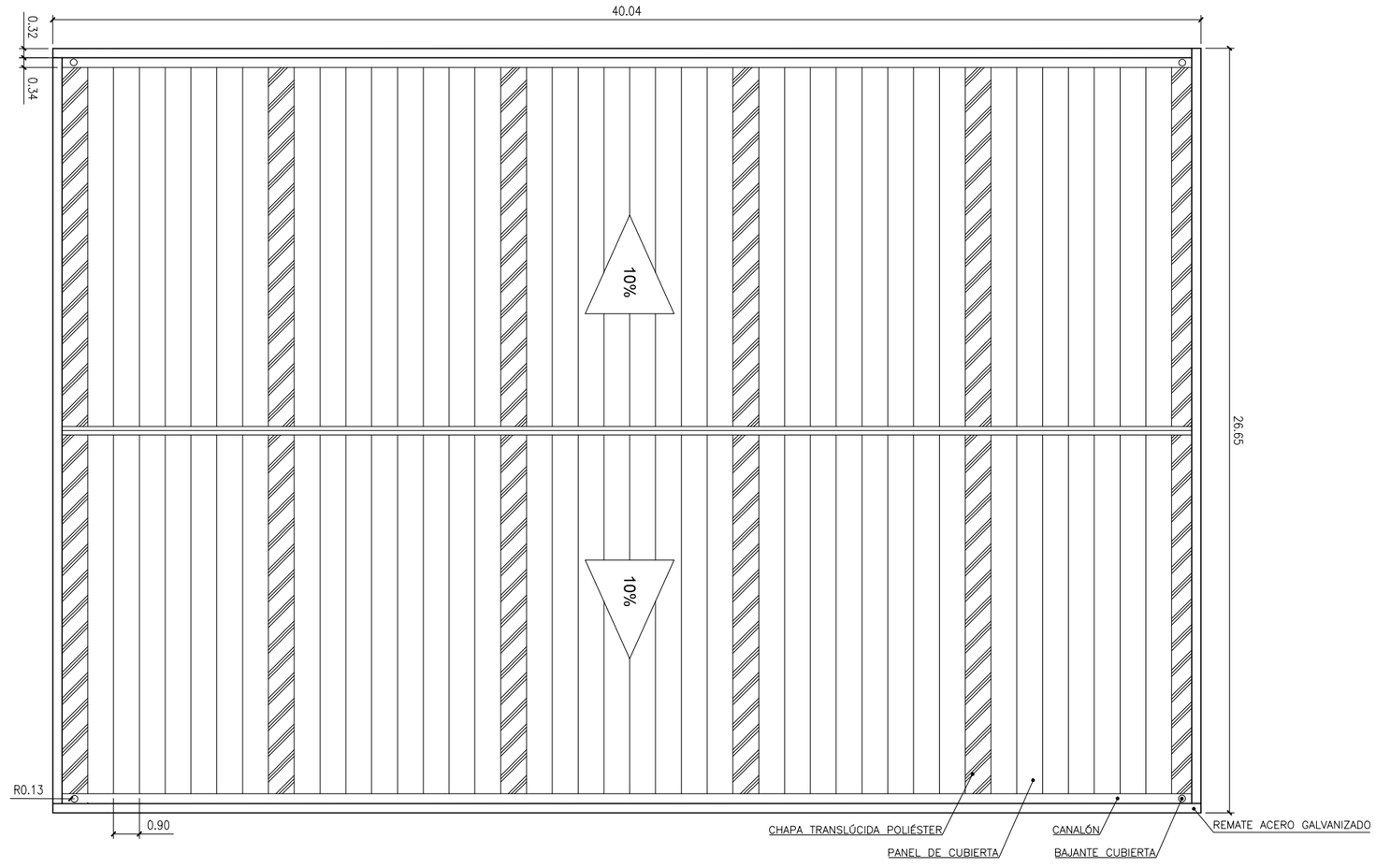
DESCRIPTION: DISTRIBUTION DRAWING

SCALE: 1/200

DRAWING NUMBER: 2 OF 7

DRAWING CODE: TFG_BST_P02

REV.: 01



CLARIFICATIONS

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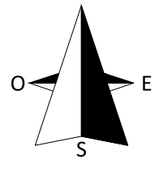

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DRAWINGS

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TESTING: Mª Jesús Vilas Carballo
Alberto Enrique Martín

DESCRIPTION: COVERAGE DRAWING

SCALE: 1/200

DRAWING NUMBER: 3 OF 7

AUTHOR: Borja Sesma Telleria

DRAWING CODE: TFG_BST_P03

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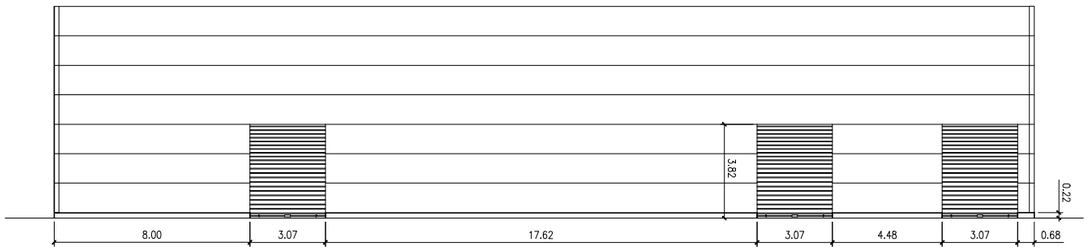

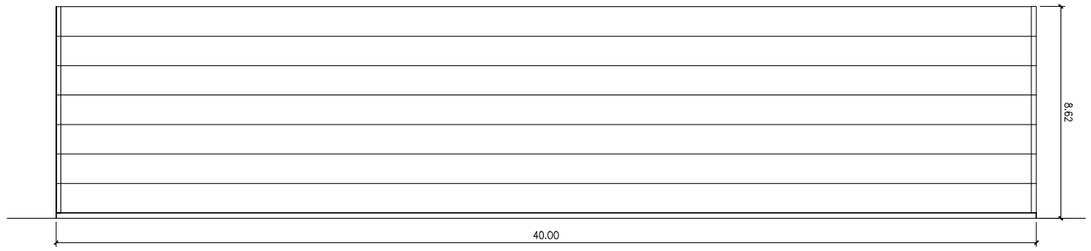

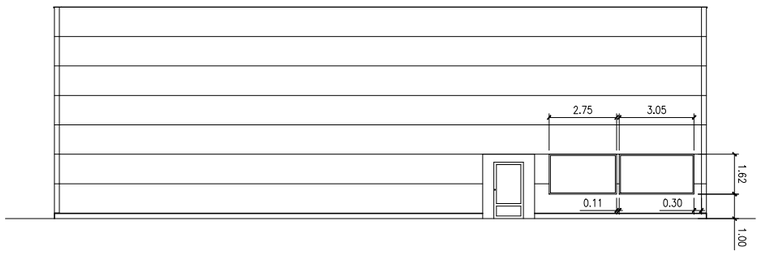

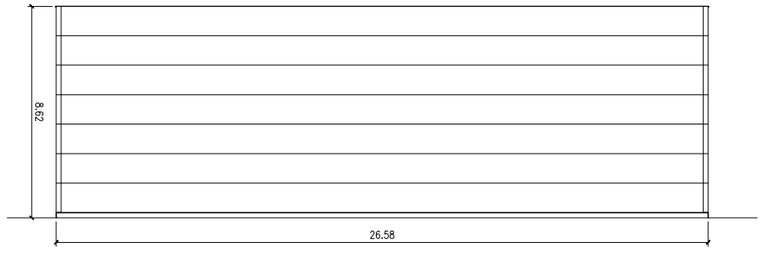

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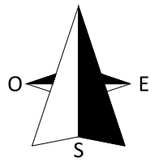

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Alberto Enrique Martín

DESCRIPTION: ELEVATIONS

SCALE: 1/250

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DRAWING CODE: TFG_BST_P04

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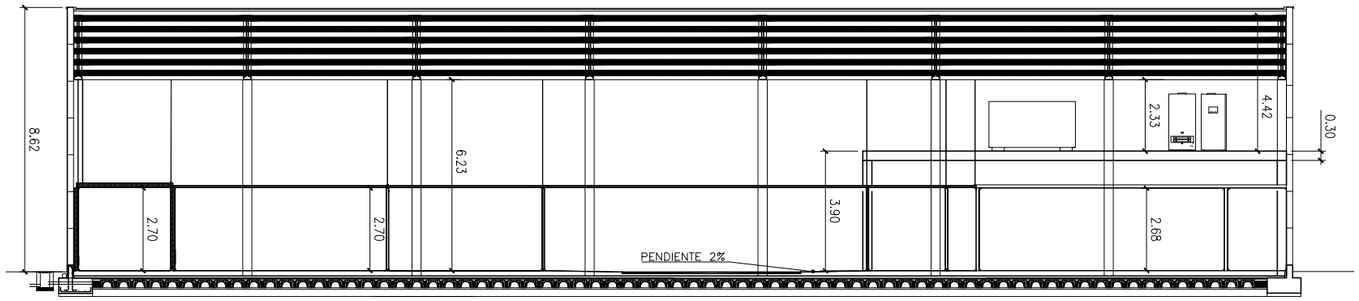
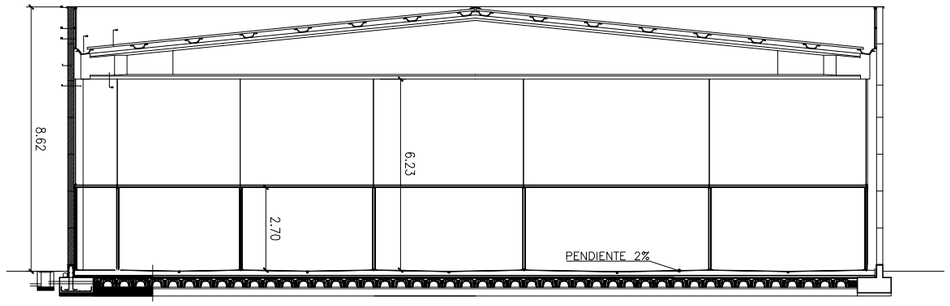


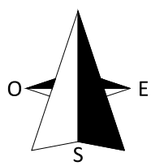


CAPTION

1. PREFABRICATED CONCRETE PANEL. E = 20 cm
2. CONCRETE PILLAR PREFABLED 50x50
3. PRABRATED CONCRETE DELTA BEAM
4. PREFABRICATED CONCRETE DRAWING
5. COVER PANEL. E = 30mm
6. PLASTIC SHEET PL-30
7. 40/40/2 STEEL PIPE
8. GALVANIZED STEEL REPLACEMENT PLATE. E = 2mm

CLARIFICATIONS

1. DIMENSIONS IN METERS (m).
2. GEOGRAPHICAL ORIENTATION COULD NOT BE THE SAME AS THE INDICATED ONE



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DRAWINGS

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TECHNICAL REF.: Borja Sesma Telleria

PROJECT: CENTRAL KITCHEN DESIGN AS A SPECIAL EMPLOYMENT CENTER

TESTING: Mª Jesús Vilas Carballo
Alberto Enrique Martín

DESCRIPTION: SECTIONS

SCALE: 1/200

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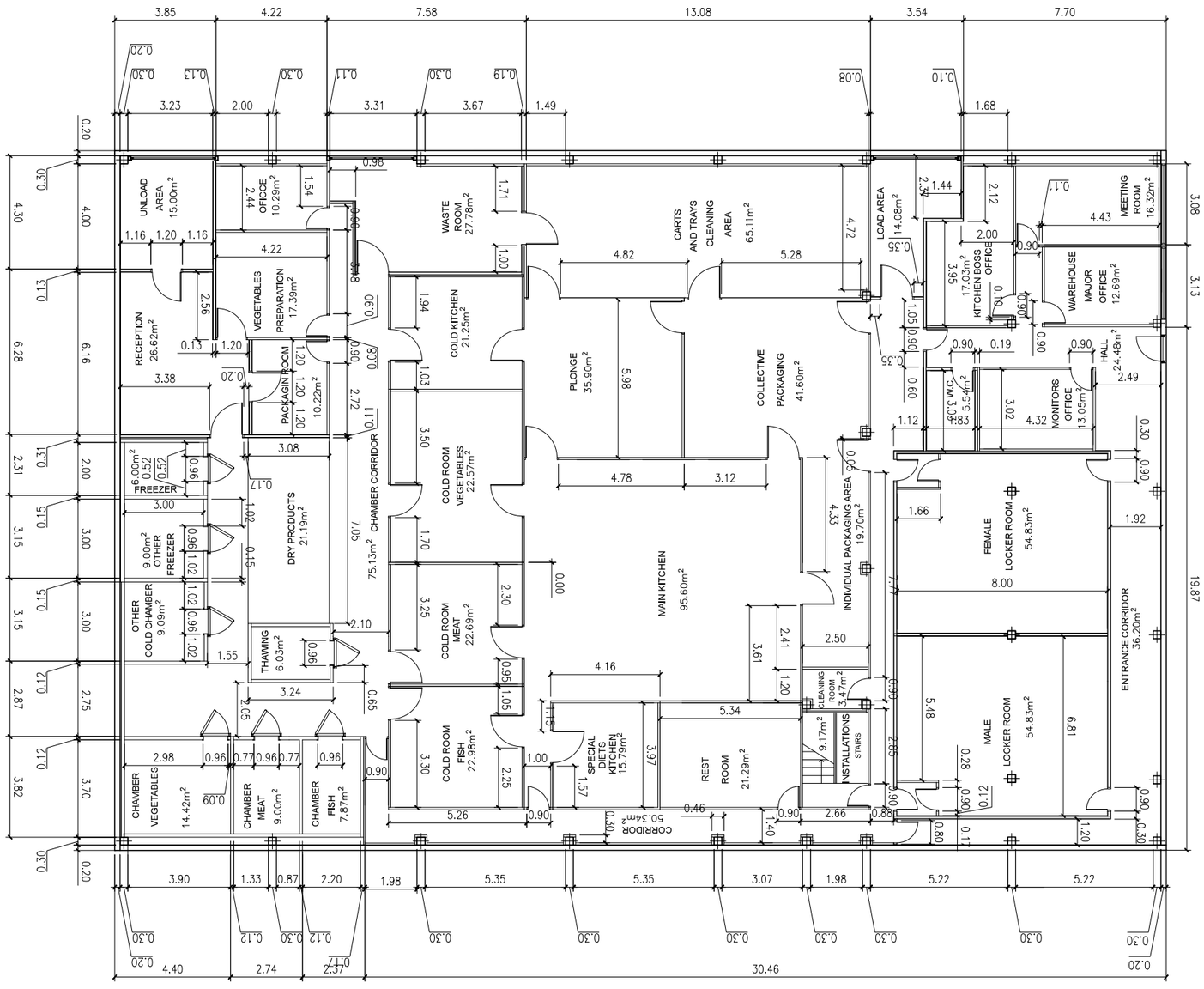
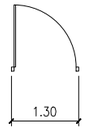
DRAWING CODE: TFG_BST_P05

REV.: 01



NOTES

1. NON DIMENSIONED DOORS



2. BOTH LOCKER ROOMS HAVE THE SAME DIMENSIONS

CLARIFICATIONS

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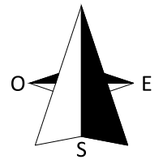

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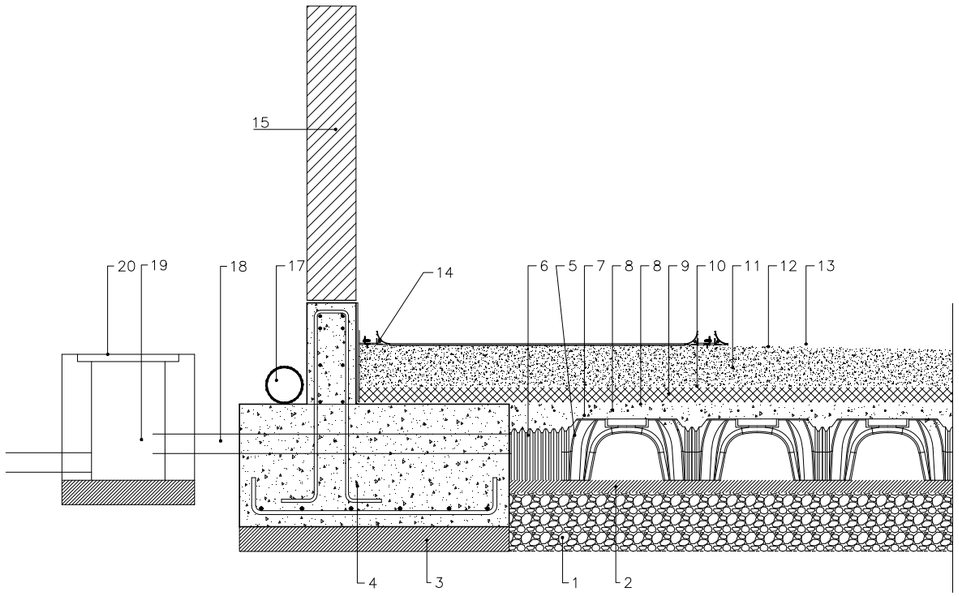
DATE: June 2017	DRAWINGS
TECHNICAL REF.: Borja Sesma Telleria	PROJECT: CENTRAL KITCHEN DESIGN AS A SPECIAL EMPLOYMENT CENTER
TESTING: Mª Jesús Vilas Carballo, Alberto Enrique Martín	DESCRIPTION: DIMENSIONED GENERAL DRAWING
SCALE: 1/200	DRAWING NUMBER: 6 OF 7
AUTHOR: Borja Sesma Telleria	
DRAWING CODE: TFG_BST_P06	REV.: 01

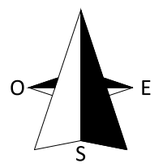


CONSTRUCTIVE DETAL CAPTION

1 .- RECORD LAYER. E = 25 cm
2 .- 5 cm CLEANING CONCRETE HM-20
3 .- 10 cm CLEANING CONCRETE HM-20
4 .- ARMED CONCRETE SHOE HM-25
5 .- GEOBLOCK of "DALIFORM"
6 .- MODULE FOR HEALTH FORGING "DALIFORM 30 cm
7 .- COMPRESSION LAYER OF ARMED CONCRETE HA-25. E = 6 cm
8 .- MESH # 15.15.6.6.
9 .- EXPOSED POLYSTYRENE INSULATING COAT. E = 6 cm
10.- POLYPROPYLENE SHEET
11.- SOLE SILICA. E = 8 cm
12.-PAVEMENT LEVELING COVER. E = 2 cm
13.- ANTI-SLIP EPOXY PAVEMENT
14.-HEALTH PROFILE
15.-PREFABRICATED CONCRETE PANEL. E = 20 cm
17.-PERIMETER DRAIN TUBE. Ø160
18.- VENTILATION CONDUCT OF THE HEALTH FORGING Ø80
19.- ARCHETTE
20.- VENTILATION GRILL.

CLARIFICATIONS

1. DIMENSIONS IN METERS (m).
2. GEOGRAPHICAL ORIENTATION COULD NOT BE THE SAME AS THE INDICATED ONE



SCHOOL OF AGRICULTURAL ENGINEERING (ETSIA)
AGRI–FOOD AND RURAL ENVIRONMENTAL ENGINEERING
FOOD INDUSTRY
UNDERGRADUATE PROJECT

upna Universidad Pública de Navarra
Nafarroako Unibertsitate Publikoa

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PROJECT: CENTRAL KITCHEN DESIGN AS A SPECIAL EMPLOYMENT CENTER

TESTING: Mª Jesús Vilas Carballo
Alberto Enrique Martín

DESCRIPTION: CONTOURED GENERAL DRAWING

SCALE: 1/25

DRAWING NUMBER: 6 OF 7

DRAWING CODE: TFG_BST_P06

REV.: 01

PUBLIC UNIVERSITY OF NAVARRE
SCHOOL OF AGRICULTURAL ENGINEERING

CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

MEASUREMENTS

Presented by
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June 2017

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TABLE OF CONTENTS: MEASUREMENTS

1 CHAPTER 1: MASONRY AND COLSINGS

Code	Unit	Description	Quantity
01.01	m^2	**False ceiling**	
		False ceiling type removable Yesyforma plates with panel type Yesycleaner of 60x60 cm on profile white view.	
			1013,14

Code	Unit	Description	Quantity
01.02	m^2	**Brick**	
		Single hollow brick 9x12x24cm, received with cement mortar (IIZ / 35A) and 1/6 river sand, received from fences, breaks, moistened of the pieces, measured on a running belt.	
			271,593

Code	Unit	Description	Quantity
01.03	m^2	**Modular double screen**	
		Modular double partition 80 mm thick, and interior-exterior structure in extruded aluminum, in pieces of 600x1200 mm. Lacquered aluminum finishes.	
			133,191

Code	Unit	Description	Quantity
01.04	m^2	**Sanitary panel**	
		Sanitary panel with smooth finish FRP, of plastic resins reinforced with glass fiber, 8mm thick in pieces of 2700x1220mm.	
			387,3636

Code	Unit	Description	Quantity
01.05	m^2	**Plaster**	
		Reinforcement of white plaster and plaster, in vertical parameters, 15mm thick.	
			310,48

2 CHAPTER 2: FLOORING, TILING AND PAINTING

Code	Unit	Description	Quantity
02.01	m^2	**Tiling**	
		Tiling with white tiles 20x20cm, with cement mortar and crumb sand 1/6.	
			543,186

Code	Unit	Description	Quantity
02.02	m^2	**Epoxy kitchen floor**	
		Epoxy industrial floor mastertop 1210. Colored epoxy coating, for the protection of concrete floors, of Halesa MBT.	
			788,00

Code	Unit	Description	Quantity
02.03	m^2	**Locker room floor**	
		Porcelain stoneware changing room floor obidos matt, non-slip class 2 class according to nte-db-su1, format 119x244x10 mm ref. 122g3. Resistant to thermal shock, frost resistant, resistant to cleaning products.	
			109,66

Code	Unit	Description	Quantity
02.04	m^2	**Office floor**	
		Antik oak laminate floor, dimensions 7x193x1285 mm with a top layer impregnated with water resistance, Lock Connect joint and HDF -E1 support plate.	
			126,25

Code	Unit	Description	Quantity
02.05	m	**Sanitary profile**	
		Profile of half plastic rod for floor-to-wall or floor-ceiling joining with 50 mm radius, received with clip-on connection, s / NTE-RSF.	
			987,832

Code	Unit	Description	Quantity
02.06	m^2	**Warehouse wall paint**	
		Plastic painting in enclosures, on plastered parameters, including surface cleaning and scaffolding, applied with a gun.	
			788,00

Code	Unit	Description	Quantity
02.07	m^2	**Warehouse wall paint**	
		Plastic painting in enclosures, on plastered parameters, including surface cleaning and scaffolding, applied with a gun.	
			310,48

Code	Unit	Description	Quantity
02.08	m^2	**Anti-slip stoneware sole**	
		31x31 cm stoneware tile flooring. Enamelled for dense traffic (Abrasion IV), (AI, AIIa s / n EN-121, EN-186) received with cement mortar CEM II / BP 32.5 N and river sand 1/6 (M-40) I / bed 2 cm. Of sand of river, grout with mortar flashing and cleaning, s / NTE-RSR-2, measured in surface actually executed.	
			197,51

3 CHAPTER 3: EXTERIOR CARPENTRY

Code	Unit	Description	Quantity
03.01	U	**Garage door**	
		3070 x 3800 mm spring-loaded, spring-loaded door, with frame made of rectangular steel pipes and Pegaso type sheet, with a metal angled fence, provided with a claw per linear meter, guides, closure and other accessories, fully installed.	
			3,00

Code	Unit	Description	Quantity
03.02	U	**Reinforced door**	
		Medium armored entrance door, with standard armored board (TNBL) 230x1200 mm, long safety hinges, 3-point security lock, long edge, wrought handle and wide-angle brass peephole, mounted.	
			1,00

Code	Unit	Description	Quantity
03.03	U	**Windows**	
		Natural anodized aluminium sliding window with 50x20mm and 1.5mm thick fence to receive glazing, with shutter rail, including safety hardware.	
			2,00

4 CHAPTER 4: INTERIOR CARPENTRY

Code	Unit	Description	Quantity
04.01	U	**Door 80 cm**	
		Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 80 cm and finished in AISI 304 stainless steel.	
			8,00

Code	Unit	Description	Quantity
04.02	U	**Door 110 cm**	
		Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 110 cm and finished in AISI 304 stainless steel.	
			2,00

Code	Unit	Description	Quantity
04.03	U	**Door 120 cm**	
		Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 110 cm and finished in AISI 304 stainless steel.	
			21,00

Code	Unit	Description	Quantity
04.04	U	**Blind door**	
		Blind passage of phenolic compact plates of 3 mm and 33 mm of rigid expanded polystyrene of density 30, glued and impregnated with 25 mm phenolic compact perimeter frame. Dimensions 900x2300mm. Matte silver anodised aluminum frame with delivery range in the whole profile, extruded in two telescopic STAFF model, which allows to cover between 80 and 290 mm.	
			12,00

5 CHAPTER 5: GLASSWARE

Code	Unit	Description	Quantity
05.01	U	**Mirror 3mm**	
		Silver mirror made with a colorless 3mm float moon. Silvery on the back side, including perimetral edging and drills.	
			5,00

Code	Unit	Description	Quantity
05.02	m^2	**Glass float colorless planilux 10mm**	
		PLANILUX colorless float glass glazing, 10 mm thick, fixed on sandwich panel with wedges of perimetral and lateral support and cold sealing with colorless silicone, including glass cuts and glazing, according to NTE-FVP-8.	
			12,42

6 CHAPTER 6: INSTALLATION OF REFRIGERATION

Code	Unit	Description	Quantity
06.01	U	**Freezing chamber**	
		Freezing chamber fully equipped and installed. Includes room separator panel. Wall thickness 150mm. Dimensions 5150x380x3000mm.	
			1,00

Code	Unit	Description	Quantity
06.02	U	**Cold chamber**	
		Fully equipped and installed refrigerator. Wall thickness 120mm.	
			5,00

Code	Unit	Description	Quantity
06.03	U	**Compact cold wall air conditioner 6200 w**	
		Compact refrigeration unit in frame and galvanized steel body with thermosetting polyester paint, with maximum maintenance access through folding panels. With a power of 6200 W.	
			4,00

Code	Unit	Description	Quantity
06.04	m^2	**Pre-lacquered panel 80mm**	
		Thermal insulation of cold rooms with self-supporting panel formed by two sheets of pre-lacquered steel in commercial profile of 0.5 mm. EPS core polyurethane expanded 20 kg / m3. With a thickness of 80 mm.	
			251,25

Code	Unit	Description	Quantity
06.05	U	**Cold chamber door with window**	
		Thermal insulation of cold rooms with self-supporting panel formed by two sheets of pre-lacquered steel in commercial profile of 0.5 mm. EPS core polyurethane expanded 20 kg / m3. With a thickness of 80 mm.	
			7,00

7 CHAPTER 7: SANITARY WARE AND TAPS AND FITTINGS

Code	Unit	Description	Quantity
07.01	U	**Soap dispenser**	
		Supply and installation of liquid soap dispenser with 1-liter push-button, transparent fumé tank and white or black ABS cover, fitted with wall-fixing anchors, and installed.	
			13,00

Code	Unit	Description	Quantity
07.02	U	**Paper towel dispenser**	
		Supply and installation of industrial toilet paper dispenser 250/300 m., With metal housing finished in white epoxy, placed by means of fixing anchors to the wall, and installed.	
			13,00

Code	Unit	Description	Quantity
07.03	U	**Shower**	
		Recommended maximum working pressure 860 kPa (125 psi), recommended temperature range from 40 ° F to 150 ° F (4 ° C to 66 ° C) and dimensions 152x96mm.	
			4,00

Code	Unit	Description	Quantity
07.04	U	**Adapted shower**	
		Shower with suspended seat with back for shower, made in cast nylon with soul in aluminum tube, seat of 400x515 mm, and back of 400x445 mm, even p.p., of placement, complementary material and small material. Measured unit.	
			2,00

Code	Unit	Description	Quantity
07.05	U	**Two-seater sink**	
		Sink on legs with two breasts, built in stainless steel ISI 304 and 316, and dimensions of 600x500x300 mm.	
			3,00

Code	Unit	Description	Quantity
07.06	U	**One-seater sink**	
		Worktop with back panel, stamped in 18-10 stainless steel, satin, rounded at the front. Stamped sinus, waterproof welding in the working plane. Open structure, front panel, tubular legs in 18-10 stainless steel, Ø 50 mm.	
			5,00

Code	Unit	Description	Quantity
07.07	U	**Shower tap**	
		Shower with flexible arm for prewash tub for dishwasher or sink. With hot and cold water mixer. Installation on the table.	
			8,00

Code	Unit	Description	Quantity
07.08	U	**Non manual tap**	
		Group with hot and cold water faucet with elbow-operated control, and long articulated nozzle. For sinks.	
			8,00

Code	Unit	Description	Quantity
07.09	U	**Toilet**	
		White vitrified porcelain toilet, low tank, normal series placed by means of stud bolts and screws, even sealed with silicone, and composed by: cup, low tank with lid and mechanisms and seat with lid lacquered, hinged steel, installed, Even with 1/2 "chromed square wrench and flexible hose of 20 cm and 1/2", running.	
			7,00

Code	Unit	Description	Quantity
07.10	U	**Adapted toilet**	
		Wall-mounted toilet for handicapped, fixed height, made of cast nylon with aluminum core of 35 mm outer diameter, and 79 cm long, even for mechanical fastening to wall, complementary material and small material. Measure the unit executed.	
			2,00

Code	Unit	Description	Quantity
07.11	U	**Non manual override washbasin**	
		Stainless steel washbasin 18/10 polished on two sides, D = 380 mm and = 1.50 mm, with cylindrical pedestal, chrome plated steel faucet and cold water mixer pedal, 2 "hot valve and chromed siphon, keys 1/2 "chrome square brackets and 20 cm flexible power hoses, installed and running.	
			10,00

Code	Unit	Description	Quantity
07.12	U	**Bathroom washbasin**	
		White glazed porcelain washbasin, 56x47 cm., To be fitted in a marble countertop or equivalent (not included), with monobloc tap, with flexible feed connections, including 32 mm drain valve, 1/2 "chrome plated, and flexible hoses of 20 cm and 1/2", installed and working.	
			6,00

8 CHAPTER 8: MACHINERY AND UTENSILS

Code	Unit	Description	Quantity
08.01	U	**Blast chiller**	
		Structure in stainless steel AISI 304, insulation in polyurethane without CFC, thickness of 80 mm. Self-closing door with external handle, lock. Internal safety release button. Useful door light: 825x620x1850 mm. Multipoint probe. USB port for easily downloading HACCP data and updating software. Electric defrosting. Without motor unit, predisposed for separate refrigerating unit. Dimensions 1050x1005x2260mm.	
			2,00

Code	Unit	Description	Quantity
08.02	U	**Cold closet**	
		Cooling cabinet made with internal and external monobloc structure in stainless steel AISI 304. Storage chamber with zippers in stainless steel AISI 304, 20 positions. Ventilated cooling system, internal evaporator to the storage chamber. Electronic control panel with thermometer - digital thermostat. Electric defrost. Equipped with each compartment: n. 3 guides in stainless steel AISI 304 and n. 3 plastic grids. Dimensions 1500x830x2040mm.	
			31,00

Code	Unit	Description	Quantity
08.03	U	**Weighing machine**	
		Industrial scale platform 45x60cm reinforced and folding scale 500kg.	
			1,00

Code	Unit	Description	Quantity
08.04	U	**Central extraction hood**	
		Constructed built in 18-10 AISI304 satin stainless steel. Equipped with 24 filters in 18-10 stainless steel, removable and easy. Washable. 12 socket IP65. Suction flow: 11,600 mc / h. Bell in 4 PARTS.	
			1,00

Code	Unit	Description	Quantity
08.05	U	**Lateral extraction hood**	
		Constructed built in 18-10 AISI304 satin stainless steel. Equipped with 24 filters in 18-10 stainless steel, removable and easy. Washable. 12 socket IP65. Suction flow: 11,600 mc / h. Bell in 4 PARTS.	
			1,00

Code	Unit	Description	Quantity
08.06	U	**Pasta cooker**	
		Pasta cooker made of stainless steel AISI 304, flat thickness 20/10 mm. Stamped vats of stainless steel AISI316L, front unloading of starches with stainless steel, baskets not included. Water immission tap on the hob, manual management of the filling tank. Screws made of galvanized steel. Heating by independent burners controlled by valves. Dimensions 800x920x250mm.	
			2,00

Code	Unit	Description	Quantity
08.07	U	**Vegetables cutter**	
		Vegetable cutter CA-611 with capacity up to 1000kg / h, built in stainless steel. Dimensions 430x410x760mm	
			1,00

Code	Unit	Description	Quantity
08.08	U	**Packing machine**	
		Heat sealing machine built in stainless steel, built with hygienic design IP 65. Atmospheric MAP packaging and sweeping. Dimensions 2930x1000x1700mm.	
			1,00

Code	Unit	Description	Quantity
08.09	U	**Vegetable wringer**	
		ES-200 drainer with 12kg load per cycle built in stainless steel. Includes wheels. Dimensions 210x290x320 mm.	
			1,00

Code	Unit	Description	Quantity
08.10	U	**Fryer**	
		Fryer built in stainless steel AISI304, flat thickness 30/10 mm. Vats stamped and welded to the plane, wide areas of draining and oil decantation; Each cuba: 2 baskets and 1 lid. Mechanical controls. Thermostat temperature control 100-185 ° C. Tubular burners in the tub. Electronic ignition by spark train, safety thermostat. Dimensions 800x920x250mm.	
			2,00

Code	Unit	Description	Quantity
08.11	U	**Refrigerator**	
		External panels and paving in stainless steel AISI304 Cooling system with fins evaporator. Electronic thermometer / thermostat. Automatic defrosting with hot gas. Evap. Automatic condensation. A door. Dimensions 2010x600x650 mm.	
			1,00

Code	Unit	Description	Quantity
08.12	U	**Smooth fry top**	
		Fry-top built in AISI 304 stainless steel, flat thickness 30/10 mm. Compound cooking plate (stainless steel AISI 316L + FE). In addition: plate cap. Heating by two independent burner batteries controlled by thermostatic modulating valve, safety thermostat. Control temperature 140-340 ° C. Dimensions 800x920x250mm.	
			1,00

Code	Unit	Description	Quantity
08.13	U	**Grill fry top**	
		Fry-top built in AISI 304 stainless steel, flat thickness 30/10 mm. Fe510D satin steel cooking hob. COOKING PRO SYSTEM. In addition: plate cap. Heating by two batteries of electrical resistors of stainless steel AISI 309, safety thermostat. Control temperature 100-270 ° C. Predisposition for remote control of power peaks. Dimensions 800x920x250mm.	
			1,00

Code	Unit	Description	Quantity
08.14	U	**Fires**	
		Gas cooker built in stainless steel AISI304, flat thickness 20/10 mm. Enameled cast iron grilles and burners. Removable burners with double and mono crown flame distributors, actuated by valves. Pilot spy and thermocouple. Flat under burner stamped and watertight. Dimensions 1200x920x250mm.	
			6,00

Code	Unit	Description	Quantity
08.15	U	**Oven**	
		Mixed oven with digital display and program library. Smoke, Delta T and Low Temperature programs. Fan with autoinversion sense rotation and 3 speed fan, of which one static. Active control of humidity in cooking. Double level of steam generation. ECO function for the reduction of expenses during cooking and washing. Double hygienizing washing system, with manual insertion of the cleaning liquid. Two washing programs. Structure in stainless steel AISI 304, AISI 316L in firing chamber. Dimensions 920x910x1250 mm.	
			3,00

Code	Unit	Description	Quantity
08.16	U	**Vegetables washer**	
		Vegetable washing machine built in stainless steel. With production capacity of 20 to 40 kg per load, 220 VAC power is required. Dimensions 1750x1100x1100mm.	
			1,00

Code	Unit	Description	Quantity
08.17	U	**Pots washer**	
		Structure and frame in AISI 304 stainless steel. Double wall panels, vats and boiler in AISI 316 stainless steel. Balanced control door with half-volatile door, loading basket of trays and kettles in 18-10 stainless steel, electric control panel, N.3 selectable wash cycles, rinse at constant temperature, equipped with rinse aid dispenser, predisposed by HACCP kit. Heat recovery. Dimensions 840x880x2140mm.	
			1,00

Code	Unit	Description	Quantity
08.18	U	**Slicer**	
		Body in aluminum alloy, blade in stainless steel. Safety switch for para-blade. Complete sharpener with safety switch. Transmission to belt. Three-phase operation. Car with hand protection. Dimensions 660x540x440 mm.	
			1,00

Code	Unit	Description	Quantity
08.19	U	**Pressure cleaner with soap dispenser**	
		Karcher equipment with a maximum flow rate of 600 l / h.	
			2,00

Code	Unit	Description	Quantity
08.20	U	**Tray dishwasher**	
		Frame in stainless steel panel with double wall and vats in 18-10 stainless steel. Wash and rinse arm in 18-10 stainless steel. 2 Feed speeds. Working Phase: pre-wash at double wash angle and double rinse. Advance basket: right-left. Working capacity 259 baskets / hour. Dimensions 3290x1030x1700 mm.	
			1,00

Code	Unit	Description	Quantity
08.21	U	**Tilting pot**	
		Rocking pot with a useful volume of 301 l. Built in stainless steel AISI 304 steam version, consumption 80kg / h, electrical connection. Dimensions 1655x1490x1030h.	
			3,00

Code	Unit	Description	Quantity
08.22	U	**Hot table**	
		Countertop in stainless steel 18-10 AISI 304 thickness 0.8 mm, height 40 mm, sound-absorbing. With posterior breastplate h.100 mm. Intermediate shelf in stainless steel thickness 0,8 mm, adjustable in 3 heights. Sliding doors with double wall, in AISI 304. Stainless steel feet Ø50mm. Stainless steel legs AISI 304 adjustable 60 mm. Ventilated heating W 1250.Dimensions 1500x700x900mm.	
			2,00

Code	Unit	Description	Quantity
08.23	U	**Vegetable peeler**	
		Peeler Pi-30. Built in stainless steel, with cycle capacity of 30 kg / cycle. Dimensions 245x300x400 mm.	
			4,00

Code	Unit	Description	Quantity
08.24	U	**Vegetable peeler**	
		Peeler Pi-30. Built in stainless steel, with cycle capacity of 30 kg / cycle. Dimensions 245x300x400 mm.	
			1,00

Code	Unit	Description	Quantity
08.25	U	**Mincer**	
		Structure in satin 18-10 stainless steel. Chopping funnel, collection bowl and group for molar in 18-10 stainless steel. Chopping knife in stainless steel with self-fixing. Hand of mortar for meat in PVC. Dimensions 270x370x240mm.	
			1,00

Code	Unit	Description	Quantity
08.26	U	**Griddle**	
		Fry-top built in AISI 304 stainless steel, flat thickness 20/10 mm. satin steel cooking hob. In addition: plate cap. Heating by burner battery controlled by thermostatic valve of modulating action, safety thermostat. Control temperature 140-340°C. Dimensions 400x920x250 mm.	
			1,00

Code	Unit	Description	Quantity
08.27	U	**Tilting pan**	
		Tilt pan made of stainless steel AISI304, flat thickness 20/10 mm. AISI 316L stainless steel cooking vessel. Burner battery heating controlled by valved faucet, pilot spy and thermocouple. Rear hinged lid and balanced.	
			3,00

Code	Unit	Description	Quantity
08.28	U	**Saw for frozen food**	
		Frozen saw with working tray: 465 x 440 mm and saw length of 1650 mm. Power: 750 W. Dimensions 460 x 455 x 870 mm.	
			2,00

Code	Unit	Description	Quantity
08.29	U	**Cutting board**	
		Constructed in 18-10 stainless steel with 10/10 satin thickness, brushed medium scotchbrite. Sides to self-supporting tubular box structure. Equipped with removable plain in nylon 1 / 1GN.	
			3,00

Code	Unit	Description	Quantity
08.30	U	**Chopboard**	
		Working plane and cut made in nylon food, for meat cutting. Dimension GN 1/1.	
			1,00

Code	Unit	Description	Quantity
08.31	U	**Ceramic hob**	
		Kitchen with ceramic hob, self-supporting structure in stainless steel AISI304, flat thickness 20/10 mm. Ceran glass ceramic flat, thickness 6 mm. Induction heating. Four separate cooking areas. Sensors recognition pot and automatic control devices. Forced cooling of electronic components. Use cooking vessels of suitable material (minimum Ø 120 mm).	
			1,00

9 CHAPTER 9: FURNITURE

Code	Unit	Description	Quantity
09.01	U	**Locker bench**	
		Mural bench with metal supports painted in the oven in color to choose, and seat based on 3 boards of varnished pine wood, galvanized steel fasteners, assembly and placement.	
			4,00

Code	Unit	Description	Quantity
09.02	U	**Transport trolley with tub**	
		Car tank for vegetable transport. Constructed in 18-10 stainless steel satin finish. Complete with removable perforated bottom and overflow tube with filter. Handle in tubular and 4 castors. Dimensions 880x660x10000 mm.	
			3,00

Code	Unit	Description	Quantity
09.03	U	**Carts for gastronorm trays**	
		Car tank for vegetable transport. Constructed in 18-10 stainless steel satin finish. Complete with removable perforated bottom and overflow tube with filter. Handle in tubular and 4 castors. Dimensions 880x660x10000 mm.	
			10,00

Code	Unit	Description	Quantity
09.04	U	**Container set. 1000l**	
		Set of four containers of 100l colors green, brown, blue and yellow, including wheels and flip-top.	
			1,00

Code	Unit	Description	Quantity
09.05	U	**Warehouse shelf**	
		Complete shelf made of stainless steel 18-10 composed of 8 uprights and 8 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x330mm.	
			33,00

Code	Unit	Description	Quantity
09.06	U	**Cold chamber shelf**	
		Complete shelf made of stainless steel 18-10 composed of 4 uprights and 4 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x165mm.	
			15,00

Code	Unit	Description	Quantity
09.07	U	**Cold chamber shelf**	
		Complete shelf made of stainless steel 18-10 composed of 4 uprights and 4 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x165mm.	
			54,00

Code	Unit	Description	Quantity
09.08	m	**Stainless steel table**	
		Worktop in AISI 304 stainless steel thickness 0.8 mm, height 40 mm. Waterproof sound absorbing support panel. Tubular legs in stainless steel, 40x40 mm. Stainless steel leg AISI 304 adjustable in height 60 mm. Mount with screws. Delivered decomposed. Dimensions 750x750x900mm.	
			35,00

Code	Unit	Description	Quantity
09.09	U	**Corner table**	
		Worktop in AISI 304 stainless steel thickness 0.8 mm, height 40 mm. Waterproof sound absorbing support panel. Tubular legs in stainless steel, 40x40 mm. Stainless steel leg AISI 304 adjustable in height 60 mm. Mount with screws. Delivered decomposed. Dimensions 750x750x900mm.	
			8,00

Code	Unit	Description	Quantity
09.10	U	**Stainless steel trash table**	
		Countertop in satin 18-10 stainless steel, with rear panel h 60 mm, thickness 12/10. Water-repellent and fireproof absorbent pad. Countertop suitable to support weights max. 150 kg / m² thanks to 4 tubular legs in stainless steel, Ø 50 mm. Eye Ø 24 cm forms one piece with the worktop. Dimensions 2000x700x900 mm.	
			5,00

Code	Unit	Description	Quantity
09.11	U	**Locker**	
		Locker for clothing in cold rolled steel, with anti-phosphating and anticorrosive treatment, in color to choose with oven dried paint, with lock, shelf and tube hanger, ventilation slats on door and measures 1.80x0.50x0.30 m, placed .	
			28,00

Code	Unit	Description	Quantity
09.12	U	**Pallet truck**	
		Hand pallet truck with reduced lift, from 0.75 to 3 tons of load capacity.	
			1,00

PUBLIC UNIVERSITY OF NAVARRE
SCHOOL OF AGRICULTURAL ENGINEERING

CENTRAL KITCHEN DESING AS SPECIAL EMPLOYMENT CENTER

UNDERGRADUATE PROJECT

Agri-food & Rural Environment Engineering

BUDGET

Presented by
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1 PRICES BOX 1

1.1 CHAPTER 1: MASONRY AND COLSINGS

Code	Unit	Description	Price (€)
01.01	m^2	**False ceiling**	10,65
		False ceiling type removable Yesyforma plates with panel type Yesycleaner of 60x60 cm on profile white view.	
		TEN and SIXTY FIVE CENTS	
01.02	m^2	**Brick**	15,15
		Single hollow brick 9x12x24cm, received with cement mortar (IIZ / 35A) and 1/6 river sand, received from fences, breaks, moistened of the pieces, measured on a running belt.	
		FIFTEEN and FIFTEEN CENTS	
01.03	m^2	**Modular double screen**	86,44
		Modular double partition 80 mm thick, and interior-exterior structure in extruded aluminum, in pieces of 600x1200 mm. Lacquered aluminum finishes.	
		EIGHTY SIX and FORTY FOUR CENTS	
01.04	m^2	**Sanitary panel**	48,38
		Sanitary panel with smooth finish FRP, of plastic resins reinforced with glass fiber, 8mm thick in pieces of 2700x1220mm.	
		FORTY EIGHT and THIRTY EIGHTH CENTS	
01.05	m^2	**Plaster**	10,17
		Reinforcement of white plaster and plaster, in vertical parameters, 15mm thick.	
		TEN and SIXTEEN CENTS	

1.2 CHAPTER 2: FLOORING, TILING AND PAINTING

Code	Unit	Description	Price (€)
02.01	m^2	**Tiling**	25,23
		Tile tiles white 20x20cm, with cement mortar and crumb sand 1/6.	
		TWENTY FIVE and TWENTY THREE CENTS	
02.02	m^2	**Epoxy kitchen floor**	68,14
		Epoxy industrial floor mastertop 1210. Colored epoxy coating, for the protection of concrete floors, of Halesa MBT.	
		SIXTY FOUR and FOURTEEN CENTS	
02.03	m^2	**Locker room floor**	33,93
		Porcelain stoneware changing room floor obidos matt, non-slip class 2 class according to nte-db-su1, format 119x244x10 mm ref. 122g3. Resistant to thermal shock, frost resistant, resistant to cleaning products.	
		THIRTY THREE and NINETY THREE CENTS	
02.04	m^2	**Office floor**	33,93
		Antik oak laminate floor, dimensions 7x193x1285 mm with a top layer impregnated with water resistance, Lock Connect joint and HDF -E1 support plate.	
		THIRTY THREE and NINETY THREE CENTS	
02.05	m	**Sanitary profile**	11,91
		Profile of half plastic rod for floor-to-wall or floor-ceiling joining with 50 mm radius, received with clip-on connection, s / NTE-RSF.	
		ELEVEN and NINETY ONE CENTS	
02.06	m^2	**Concrete epoxy paint**	11,68
		Blue colored epoxy coating for the protection of concrete pavements, Mastertop 1210 by Halesa MBT.	
		ELEVEN and SIXTY EIGHT CENTS	
02.07	m^2	**Warehouse wall paint**	7,49
		Plastic painting in enclosures, on plastered parameters, including surface cleaning and scaffolding, applied with a gun.	
		SEVEN and FORTY NINE CENTS	
02.08	m^2	**Anti-slip stoneware sole**	33,93
		31x31 cm stoneware tile flooring. Enamelled for dense traffic (Abrasion IV), (AI, AIIa s / n EN-121, EN-186) received with cement mortar CEM II / BP 32.5 N and river sand 1/6 (M-40) I / bed 2 cm. Of sand of river, grout with mortar flashing and cleaning, s / NTE-RSR-2, measured in surface actually executed.	
		THIRTY THREE and NINETY THREE CENTS	

1.3 CHAPTER 3: EXTERIOR CARPENTRY

Code	Unit	Description	Price (€)
03.01	U	**Garage door**	557,99
		3070 x 3800 mm spring-loaded, spring-loaded door, with frame made of rectangular steel pipes and Pegaso type sheet, with a metal angled fence, provided with a claw per linear meter, guides, closure and other accessories, fully installed.	
		FIVE HUNDRED FIFTY SEVEN and NINETY NINE CENTS	
03.02	U	**Reinforced door**	533,83
		Medium armored entrance door, with standard armored board (TNBL) 230x1200 mm, long safety hinges, 3-point security lock, long edge, wrought handle and wide-angle brass peephole, mounted.	
		FIVE HUNDRED FIFTY THREE and EIGHTY THREE CENTS	
03.03	U	**Windows**	266,54
		Natural anodized aluminum sliding window with 50x20mm and 1.5mm thick fence to receive glazing, with shutter rail, including safety hardware.	
		TWO HUNDRED SIXTY SIX and FIFTY FOUR CENTS	

1.4 CHAPTER 4: INTERIOR CARPENTRY

Code	Unit	Description	Price (€)
04.01	U	**Door 80 cm**	105,00
		Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 80 cm and finished in AISI 304 stainless steel.	
		ONE HUNDRED FIVE EUROS	
04.02	U	**Door 110 cm**	217,73
		Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 110 cm and finished in AISI 304 stainless steel.	
		TWO HUNDRED SEVENTEEN and SEVENTY THREE CENTS	
04.03	U	**Door 120 cm**	335,53
		Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 110 cm and finished in AISI 304 stainless steel.	
		THREE HUNDRED THIRTY FIVE and FIFTY THREE CENTS	
04.04	U	**Blind door**	446,38
		Blind passage of phenolic compact plates of 3 mm and 33 mm of rigid expanded polystyrene of density 30, glued and impregnated with 25 mm phenolic compact perimeter frame. Dimensions 900x2300mm. Matte silver anodised aluminum frame with delivery range in the whole profile, extruded in two telescopic STAFF model, which allows to cover between 80 and 290 mm.	
		FOUR HUNDRED FORTY SIX and THIRTY EIGHT CENTS	

1.5 CHAPTER 5: GLASSWARE

Code	Unit	Description	Price (€)
05.01	U	**Mirror 3mm**	83,36
		Silver mirror made with a colorless 3mm float moon. Silvery on the back side, including perimetral edging and drills.	
		EIGHTY THREE and THIRTY SIX CENTS	
05.02	m^2	**Glass float colorless planilux 10mm**	92,10
		PLANILUX colorless float glass glazing, 10 mm thick, fixed on sandwich panel with wedges of perimetral and lateral support and cold sealing with colorless silicone, including glass cuts and glazing, according to NTE-FVP-8.	
		NINETY TWO and TEN CENTS	

1.6 CHAPTER 6: INSTALLATION OF REFRIGERATION

Code	Unit	Description	Price (€)
06.01	U	**Freezing chamber**	6.753,83
		Freezing chamber fully equipped and installed. Includes room separator panel. Wall thickness 150mm. Dimensions 5150x380x3000mm.	
		SIX THOUSAND SEVEN HUNDRED FIFTY THREE and EIGHTY THREE CENTS	
06.02	U	**Cold chamber**	5.544,66
		Fully equipped and installed refrigerator. Wall thickness 120mm.	
		FIVE THOUSAND FIVE HUNDRED FORTY FOUR and SIXTY SIX CENTS	
06.03	U	**Compact cold wall air conditioner 6200 w**	3.317,65
		Compact refrigeration unit in frame and galvanized steel body with thermosetting polyester paint, with maximum maintenance access through folding panels. With a power of 6200 W.	
		THREE THOUSAND THREE HUNDRED SEVENTEEN and SIXTY FIVE CENTS	
06.04	m^2	**Pre-lacquered panel 80mm**	54,20
		Thermal insulation of cold rooms with self-supporting panel formed by two sheets of pre-lacquered steel in commercial profile of 0.5 mm. EPS core polyurethane expanded 20 kg / m3. With a thickness of 80 mm.	
		FIFTY FOUR and TWENTY CENTS	
06.05	U	**Cold chamber door with window**	231,36
		Thermal insulation of cold rooms with self-supporting panel formed by two sheets of pre-lacquered steel in commercial profile of 0.5 mm. EPS core polyurethane expanded 20 kg / m3. With a thickness of 80 mm.	
		TWO HUNDRED THIRTY ONE and THIRTY SIX CENTS	

1.7 CHAPTER 7: SANITARY WARE AND TAPS AND FITTINGS

Code	Unit	Description	Price (€)
07.01	U	**Soap dispenser**	19,24
		Supply and installation of liquid soap dispenser with 1-liter push-button, transparent fumé tank and white or black ABS cover, fitted with wall-fixing anchors, and installed.	
		NINETEEN and TWENTY FOUR CENTS	
07.02	U	**Paper towel dispenser**	22,67
		Supply and installation of industrial toilet paper dispenser 250/300 m., With metal housing finished in white epoxy, placed by means of fixing anchors to the wall, and installed.	
		TWENTY TWO and SIXTY SEVEN CENTS	
07.03	U	**Shower**	167,65
		Recommended maximum working pressure 860 kPa (125 psi), recommended temperature range from 40 ° F to 150 ° F (4 ° C to 66 ° C) and dimensions 152x96mm.	
		ONE HUNDRED SIXTY SEVEN and SIXTY FIVE CENTS	
07.04	U	**Adapted shower**	167,65
		Shower with suspended seat with back for shower, made in cast nylon with soul in aluminum tube, seat of 400x515 mm, and back of 400x445 mm, even p.p., of placement, complementary material and small material. Measured unit.	
		ONE HUNDRED SIXTY SEVEN and SIXTY FIVE CENTS	
07.05	U	**Two-seater sink**	379,04
		Sink on legs with two breasts, built in stainless steel ISI 304 and 316, and dimensions of 600x500x300 mm.	
		THREE HUNDRED SEVENTY NINE and FOUR CENTS	
07.06	U	**One-seater sink**	540,32
		Worktop with back panel, stamped in 18-10 stainless steel, satin, rounded at the front. Stamped sinus, waterproof welding in the working plane. Open structure, front panel, tubular legs in 18-10 stainless steel, Ø 50 mm.	
		FIVE HUNDRED FORTY and THIRTY TWO CENTS	
07.07	U	**Shower tap**	127,20
		Shower with flexible arm for prewash tub for dishwasher or sink. With hot and cold water mixer. Installation on the table.	
		ONE HUNDRED TWENTY SEVEN and TWENTY CENTS	
07.08	U	**Non manual tap**	214,90
		Group with hot and cold water faucet with elbow-operated control, and long articulated nozzle. For sinks.	
		TWO HUNDRED FOURTEEN and NINETY CENTS	
07.09	U	**Toilet**	146,08
		White vitrified porcelain toilet, low tank, normal series placed by means of stud bolts and screws, even sealed with silicone, and composed by: cup, low tank with lid and mechanisms and seat with lid lacquered, hinged steel, installed, Even with 1/2	

		"chromed square wrench and flexible hose of 20 cm and 1/2", running.	
		ONE HUNDRED FORTY SIX and EIGHT CENTS	
07.10	U	**Adapted toilet**	184,82
		Wall-mounted toilet for handicapped, fixed height, made of cast nylon with aluminum core of 35 mm outer diameter, and 79 cm long, even for mechanical fastening to wall, complementary material and small material. Measure the unit executed.	
		ONE HUNDRED EIGHTY FOUR and EIGHTY TWO CENTS	
07.11	U	**Non manual override washbasin**	370,31
		Stainless steel washbasin 18/10 polished on two sides, D = 380 mm and = 1.50 mm, with cylindrical pedestal, chrome plated steel faucet and cold water mixer pedal, 2 "hot valve and chromed siphon, keys 1/2 "chrome square brackets and 20 cm flexible power hoses, installed and running.	
		THREE HUNDRED SEVENTY and THIRTY ONE CENTS	
07.12	U	**Bathroom washbasin**	102,52
		White glazed porcelain washbasin, 56x47 cm., To be fitted in a marble countertop or equivalent (not included), with monobloc tap, with flexible feed connections, including 32 mm drain valve, 1/2 "chrome plated, and flexible hoses of 20 cm and 1/2", installed and working.	
		ONE HUNDRED FIVE and FIFTY TWO CENTS	

1.8 CHAPTER 8: MACHINERY AND UTENSILS

Code	Unit	Description	Price (€)
08.01	U	**Blast chiller**	6.830,20
		Structure in stainless steel AISI 304, insulation in polyurethane without CFC, thickness of 80 mm. Self-closing door with external handle, lock. Internal safety release button. Useful door light: 825x620x1850 mm. Multipoint probe. USB port for easily downloading HACCP data and updating software. Electric defrosting. Without motor unit, predisposed for separate refrigerating unit. Dimensions 1050x1005x2260mm.	
		SIX THOUSAND EIGHT HUNDRED THIRTY and TWENTY CENTS	
08.02	U	**Cold closet**	479,20
		Cooling cabinet made with internal and external monobloc structure in stainless steel AISI 304. Storage chamber with zippers in stainless steel AISI 304, 20 positions. Ventilated cooling system, internal evaporator to the storage chamber. Electronic control panel with thermometer - digital thermostat. Electric defrost. Equipped with each compartment: n. 3 guides in stainless steel AISI 304 and n. 3 plastic grids. Dimensions 1500x830x2040mm.	
		FOUR HUNDRED SEVENTY NINE and TWENTY CENTS	
08.03	U	**Weighing machine**	129,00
		Industrial scale platform 45x60cm reinforced and folding scale 500kg.	
		ONE HUNDRED AND TWENTY EUROS	
08.04	U	**Central extraction hood**	943,49
		Constructed built in 18-10 AISI304 satin stainless steel. Equipped with 24 filters in 18-10 stainless steel, removable and easy. Washable. 12 socket IP65. Suction flow: 11,600 mc / h. Bell in 4 PARTS.	
		NINE HUNDRED FORTY THREE and FORTYNINE CENTS	
08.05	U	**Lateral extraction hood**	734,98
		Constructed built in 18-10 AISI304 satin stainless steel. Equipped with 24 filters in 18-10 stainless steel, removable and easy. Washable. 12 socket IP65. Suction flow: 11,600 mc / h. Bell in 4 PARTS.	
		SEVEN HUNDRED THIRTY FOUR and NINETY EIGHT CENTS	
08.06	U	**Pasta cooker**	39.423,64
		Pasta cooker made of stainless steel AISI 304, flat thickness 20/10 mm. Stamped vats of stainless steel AISI316L, front unloading of starches with stainless steel, baskets not included. Water immission tap on the hob, manual management of the filling tank. Screws made of galvanized steel. Heating by independent burners controlled by valves. Dimensions 800x920x250mm.	

		THIRTY NINE THOUSAND FOUR HUNDRED TWENTY THREE and SIXTY FOUR CENTS	
08.07	U	**Vegetables cutter**	525,23
		Vegetable cutter CA-611 with capacity up to 1000kg / h, built in stainless steel. Dimensions 430x410x760mm	
		FIVE HUNDRED TWENTY FIVE and TWENTY THIRD CENTS	
08.08	U	**Packing machine**	24.983,93
		Heat sealing machine built in stainless steel, built with hygienic design IP 65. Atmospheric MAP packaging and sweeping. Dimensions 2930x1000x1700mm.	
		TWENTY FOUR THOUSAND HUNDRED EIGHTY THREE and NINETY THREE CENTS	
08.09	U	**Vegetable wringer**	9.307,23
		ES-200 drainer with 12kg load per cycle built in stainless steel. Includes wheels. Dimensions 210x290x320 mm.	
		NINE THOUSAND THREE HUNDRED SEVEN and TWENTY THREE CENTS	
08.10	U	**Fryer**	25.890,32
		Fryer built in stainless steel AISI304, flat thickness 30/10 mm. Vats stamped and welded to the plane, wide areas of draining and oil decantation; Each cuba: 2 baskets and 1 lid. Mechanical controls. Thermostat temperature control 100-185 ° C. Tubular burners in the tub. Electronic ignition by spark train, safety thermostat. Dimensions 800x920x250mm.	
		TWENTY FIVE THOUSAND EIGHT HUNDRED NINETY and THIRTY TWO CENTS	
08.11	U	**Refrigerator**	1.749,71
		External panels and paving in stainless steel AISI304 Cooling system with fins evaporator. Electronic thermometer / thermostat. Automatic defrosting with hot gas. Evap. Automatic condensation. A door. Dimensions 2010x600x650 mm.	
		THOUSAND SEVEN HUNDRED FORTY NINE and SEVENTY ONE CENTS	
08.12	U	**Smooth fry top**	447,33
		Fry-top built in AISI 304 stainless steel, flat thickness 30/10 mm. Compound cooking plate (stainless steel AISI 316L + FE). In addition: plate cap. Heating by two independent burner batteries controlled by thermostatic modulating valve, safety thermostat. Control temperature 140-340 ° C. Dimensions 800x920x250mm.	
		FOUR HUNDRED FORTY SEVEN and THIRTY THREE CENTS	
08.13	U	**Grill fry top**	524,93
		Fry-top built in AISI 304 stainless steel, flat thickness 30/10 mm. Fe510D satin steel cooking hob. COOKING PRO SYSTEM. In addition: plate cap. Heating by two batteries of electrical resistors of stainless steel AISI 309, safety	

		thermostat. Control temperature 100-270 ° C. Predisposition for remote control of power peaks. Dimensions 800x920x250mm.	
		FIVE HUNDRED TWENTY FOUR and NINETY THREE CENTS	
08.14	U	**Fires**	1.607,70
		Gas cooker built in stainless steel AISI304, flat thickness 20/10 mm. Enameled cast iron grilles and burners. Removable burners with double and mono crown flame distributors, actuated by valves. Pilot spy and thermocouple. Flat under burner stamped and watertight. Dimensions 1200x920x250mm.	
		THOUSAND SIX HUNDRED SEVEN and SEVENTY CENTS	
08.15	U	**Oven**	8.918,98
		Mixed oven with digital display and program library. Smoke, Delta T and Low Temperature programs. Fan with autoinversion sense rotation and 3 speed fan, of which one static. Active control of humidity in cooking. Double level of steam generation. ECO function for the reduction of expenses during cooking and washing. Double hygienizing washing system, with manual insertion of the cleaning liquid. Two washing programs. Structure in stainless steel AISI 304, AISI 316L in firing chamber. Dimensions 920x910x1250 mm.	
		EIGHT THOUSAND NINE HUNDRED EIGHTEEN and NINETY EIGHT CENTS	
08.16	U	**Vegetables washer**	9.135,34
		Vegetable washing machine built in stainless steel. With production capacity of 20 to 40 kg per load, 220 VAC power is required. Dimensions 1750x1100x1100mm.	
		NINE THOUSAND HUNDRED THIRTY FIVE and THIRTY FOUR CENTS	
08.17	U	**Pots washer**	13.805,00
		Structure and frame in AISI 304 stainless steel. Double wall panels, vats and boiler in AISI 316 stainless steel. Balanced control door with half-volatile door, loading basket of trays and kettles in 18-10 stainless steel, electric control panel, N.3 selectable wash cycles, rinse at constant temperature, equipped with rinse aid dispenser, predisposed by HACCP kit. Heat recovery. Dimensions 840x880x2140mm.	
		THIRTEEN THOUSAND EIGHT HUNDRED FIVE EUROS	
08.18	U	**Slicer**	469,00
		Body in aluminum alloy, blade in stainless steel. Safety switch for para-blade. Complete sharpener with safety switch. Transmission to belt. Three-phase operation. Car with hand protection. Dimensions 660x540x440 mm.	
		FOUR HUNDRED SIXTY NINE EUROS	

08.19	U	**Pressure cleaner with soap dispenser**	734,00
		Karcher equipment with a maximum flow rate of 600 l / h.	
		SEVEN HUNDRED THIRTY FOUR EUROS	
08.20	U	**Tray dishwasher**	72.946,23
		Frame in stainless steel panel with double wall and vats in 18-10 stainless steel. Wash and rinse arm in 18-10 stainless steel. 2 Feed speeds. Working Phase: pre-wash at double wash angle and double rinse. Advance basket: right-left. Working capacity 259 baskets / hour. Dimensions 3290x1030x1700 mm.	
		SEVENTY TWO THOUSAND NINE HUNDRED FORTY SIX and TWENTY THREE CENTS	
08.21	U	**Tilting pot**	22.337,67
		Rocking pot with a useful volume of 301 l. Built in stainless steel AISI 304 steam version, consumption 80kg / h, electrical connection. Dimensions 1655x1490x1030h.	
		TWENTY TWO THOUSAND THREE HUNDRED THIRTY SEVEN and SIXTY SEVEN CENTS	
08.22	U	**Hot table**	1.083,12
		Countertop in stainless steel 18-10 AISI 304 thickness 0.8 mm, height 40 mm, sound-absorbing. With posterior breastplate h.100 mm. Intermediate shelf in stainless steel thickness 0,8 mm, adjustable in 3 heights. Sliding doors with double wall, in AISI 304. Stainless steel feet Ø50mm. Stainless steel legs AISI 304 adjustable 60 mm. Ventilated heating W 1250.Dimensions 1500x700x900mm.	
		THOUSAND EIGHTY THREE and TWELVE CENTS	
08.23	U	**Hot plate table**	2.340,00
		Kitchen with electric plates with self-supporting structure of AISI304 stainless steel, flat thickness 20/10 mm. Watertight cast cooking hobs with thermal protection device. Each plate is operated by a 5 position switch. Dimensions 800x920x250mm.	
		TWO THOUSAND THREE HUNDRED FORTY EUROS	
08.24	U	**Vegetable peeler**	942,00
		Peeler Pi-30. Built in stainless steel, with cycle capacity of 30 kg / cycle. Dimensions 245x300x400 mm.	
		NINET HUNDRED FORTY TWO EUROS	
08.25	U	**Mincer**	3.109,70
		Structure in satin 18-10 stainless steel. Chopping funnel, collection bowl and group for molar in 18-10 stainless steel. Chopping knife in stainless steel with self-fixing. Hand of mortar for meat in PVC. Dimensions 270x370x240mm.	
		THREE THOUSAND HUNDRED NINE and SEVENTY CENTS	
08.26	U	**Griddle**	235,44
		Fry-top built in AISI 304 stainless steel, flat thickness 20/10 mm. Fe510D satin steel cooking hob. In addition: plate cap. Heating by burner battery controlled by thermostatic valve of	

		modulating action, safety thermostat. Control temperature 140-340 ° C. Dimensions 400x920x250 mm.	
		TWO HUNDRED THIRTY FIVE and FORTY FOUR CENTS	
08.27	U	**Tilting pan**	16.571,24
		Tilt pan made of stainless steel AISI304, flat thickness 20/10 mm. AISI 316L stainless steel cooking vessel. Burner battery heating controlled by valved faucet, pilot spy and thermocouple. Rear hinged lid and balanced.	
		SIXTEEN THOUSAND FIVE HUNDRED SEVENTY ONE and TWENTY FOUR CENTS	
08.28	U	**Saw for frozen food**	834,32
		Frozen saw with working tray: 465 x 440 mm and saw length of 1650 mm. Power: 750 W. Dimensions 460 x 455 x 870 mm.	
		EIGHT HUNDRED THIRTY FOUR and THIRTY TWO CENTS	
08.29	U	**Cutting board**	45,00
		Constructed in 18-10 stainless steel with 10/10 satin thickness, brushed medium scotchbrite. Sides to self-supporting tubular box structure. Equipped with removable plain in nylon 1 / 1GN.	
		FORTY FIVE EUROS	
08.30	U	**Chopboard**	200,00
		Working plane and cut made in nylon food, for meat cutting. Dimension GN 1/1.	
		TWO HUNDRED EUROS	
08.31	U	**Ceramic hob**	160,00
		Kitchen with ceramic hob, self-supporting structure in stainless steel AISI304, flat thickness 20/10 mm. Ceran glass ceramic flat, thickness 6 mm. Induction heating. Four separate cooking areas. Sensors recognition pot and automatic control devices. Forced cooling of electronic components. Use cooking vessels of suitable material (minimum Ø 120 mm).	
		ONE HUNDRED SIXTY EUROS	

1.9 CHAPTER 9: FURNITURE

Code	Unit	Description	Price (€)
09.01	U	**Locker bench**	122,65
		Mural bench with metal supports painted in the oven in color to choose, and seat based on 3 boards of varnished pine wood, galvanized steel fasteners, assembly and placement.	
		ONE HUNDRED TWENTY TWO and SIXTY FIVE CENTS	
09.02	U	**Transport trolley with tub**	156,00
		Car tank for vegetable transport. Constructed in 18-10 stainless steel satin finish. Complete with removable perforated bottom and overflow tube with filter. Handle in tubular and 4 castors. Dimensions 880x660x10000 mm.	
		ONE HUNDRED FIFTY SIX EUROS	
09.03	U	**Carts for gastronorm trays**	347,27
		Car tank for vegetable transport. Constructed in 18-10 stainless steel satin finish. Complete with removable perforated bottom and overflow tube with filter. Handle in tubular and 4 castors. Dimensions 880x660x10000 mm.	
		THREE HUNDRED FOUTY SEVEN and TWENTY SEVEN CENTS	
09.04	U	**Container set. 1000l**	1.200,00
		Set of four containers of 100l colors green, brown, blue and yellow, including wheels and flip-top.	
		ONE THOUSAND TWO HUNDRED EUROS	
09.05	U	**Pedal bin**	122,06
		Made in 18-10 satin stainless steel, with printed lid and pedal. Container with rotating wheels. Capacity 75 l. 400x605mm.	
		HUNDRED TWENTY TWO and SIX CENTS	
09.06	U	**Warehouse shelf**	108,90
		Complete shelf made of stainless steel 18-10 composed of 8 uprights and 8 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x330mm.	
		ONE HUNDRED EIGHT and NINETY CENTS	
09.07	U	**Cold chamber shelf**	209,00
		Complete shelf made of stainless steel 18-10 composed of 4 uprights and 4 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x165mm.	
		TWO HUNDRED NINE EUROS	
09.08	m	**Stainless steel table**	208,21
		Worktop in AISI 304 stainless steel thickness 0.8 mm, height 40 mm. Waterproof sound absorbing support panel. Tubular legs in stainless steel, 40x40 mm. Stainless steel leg AISI 304 adjustable in height 60 mm. Mount with screws. Delivered decomposed. Dimensions 750x750x900mm.	
		TWO HUNDRED EIGHT AND TWENTY ONE CENTS	

09.09	U	**Corner table**	369,98
		Worktop in AISI 304 stainless steel thickness 0.8 mm, height 40 mm. Waterproof sound absorbing support panel. Tubular legs in stainless steel, 40x40 mm. Stainless steel leg AISI 304 adjustable in height 60 mm. Mount with screws. Delivered decomposed. Dimensions 750x750x900mm.	
		THREE HUNDRED SIXTY NINE and NINETY EIGHT CENTS	
09.10	U	**Stainless steel trash table**	480,70
		Countertop in satin 18-10 stainless steel, with rear panel h 60 mm, thickness 12/10. Water-repellent and fireproof absorbent pad. Countertop suitable to support weights max. 150 kg / m² thanks to 4 tubular legs in stainless steel, Ø 50 mm. Eye Ø 24 cm forms one piece with the worktop. Dimensions 2000x700x900 mm.	
		FOUR HUNDRED EIGHTY and SEVENTY CENTS	
09.11	U	**Locker**	25,00
		Locker for clothing in cold rolled steel, with anti-phosphating and anticorrosive treatment, in color to choose with oven dried paint, with lock, shelf and tube hanger, ventilation slats on door and measures 1.80x0.50x0.30 m, placed .	
		TWENTY FIVE EUROS	
09.12	U	**Pallet truck**	277,09
		Hand pallet truck with reduced lift, from 0.75 to 3 tons of load capacity.	
		TWO HUNDRED SEVENTY SEVEN and NINE CENTS	

2 GLOBAL BUDGET

2.1 CHAPTER 1: MASONRY AND COLSINGS

Code	Unit	Description	Quantity	Price (€)	Amount(€)
01.01	m^2	**False ceiling** False ceiling type removable Yesyforma plates with panel type Yesycleaner of 60x60 cm on profile white view.	1013,14	10,65	10.789,94
01.02	m^2	**Brick** Single hollow brick 9x12x24cm, received with cement mortar (IIZ / 35A) and 1/6 river sand, received from fences, breaks, moistened of the pieces, measured on a running belt.	271,593	15,15	4.114,63
01.03	m^2	**Modular double screen** Modular double partition 80 mm thick, and interior-exterior structure in extruded aluminum, in pieces of 600x1200 mm. Lacquered aluminum finishes.	133,191	86,44	11.513,03
01.04	m^2	**Sanitary panel** Sanitary panel with smooth finish FRP, of plastic resins reinforced with glass fiber, 8mm thick in pieces of 2700x1220mm.	387,3636	48,38	18.740,65
01.05	m^2	**Plaster** Reinforcement of white plaster and plaster, in vertical parameters, 15mm thick.	310,48	10,17	3.157,58

2.2 CHAPTER 2: FLOORING, TILING AND PAINTING

Code	Unit	Description	Quantity	Price (€)	Amount(€)
02.01	m^2	**Tiling** Tile tiles white 20x20cm, with cement mortar and crumb sand 1/6.	543,186	25,23	13.704,58
02.02	m^2	**Epoxy kitchen floor** Epoxy industrial floor mastertop 1210. Colored epoxy coating, for the protection of concrete floors, of Halesa MBT.	788,00	68,14	53.694,32
02.03	m^2	**Locker room floor** Porcelain stoneware changing room floor obidos matt, non-slip class 2 class according to nte-db-su1, format 119x244x10 mm ref. 122g3. Resistant to thermal shock, frost resistant, resistant to cleaning products.	109,66	33,93	3.720,76
02.04	m^2	**Office floor** Antik oak laminate floor, dimensions 7x193x1285 mm with a top layer impregnated with water resistance, Lock Connect joint and HDF -E1 support plate.	126,25	33,93	4.283,66
02.05	m	**Sanitary profile** Profile of half plastic rod for floor-to-wall or floor-ceiling joining with 50 mm radius, received with clip-on connection, s / NTE-RSF.	987,832	11,91	11.765,08
02.06	m^2	**Concrete epoxy paint** Blue colored epoxy coating for the protection of concrete pavements, Mastertop 1210 by Halesa MBT.	788,00	11,68	9.203,84
02.07	m^2	**Warehouse wall paint** Plastic painting in enclosures, on plastered parameters, including surface cleaning and scaffolding, applied with a gun.	310,48	7,49	2.325,50

02.08	m^2	**Anti-slip stoneware sole** 31x31 cm stoneware tile flooring. Enamelled for dense traffic (Abrasion IV), (AI, AIIa s / n EN-121, EN-186) received with cement mortar CEM II / BP 32.5 N and river sand 1/6 (M-40) I / bed 2 cm. Of sand of river, grout with mortar flashing and cleaning, s / NTE-RSR-2, measured in surface actually executed.	197,51	33,93	6.701,51

2.3 CHAPTER 3: EXTERIOR CARPENTRY

Code	Unit	Description	Quantity	Price (€)	Amount(€)
03.01	U	**Garage door** 3070 x 3800 mm spring-loaded, spring-loaded door, with frame made of rectangular steel pipes and Pegaso type sheet, with a metal angled fence, provided with a claw per linear meter, guides, closure and other accessories, fully installed.	3,00	557,99	1.673,97
03.02	U	**Reinforced door** Medium armored entrance door, with standard armored board (TNBL) 230x1200 mm, long safety hinges, 3-point security lock, long edge, wrought handle and wide-angle brass peephole, mounted.	1,00	533,83	533,83
03.03	U	**Windows** Natural anodized aluminum sliding window with 50x20mm and 1.5mm thick fence to receive glazing, with shutter rail, including safety hardware.	2,00	266,54	533,08

2.4 CHAPTER 4: INTERIOR CARPENTRY

Code	Unit	Description	Quantity	Price (€)	Amount(€)
04.01	U	**Door 80 cm** Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 80 cm and finished in AISI 304 stainless steel.	8,00	105,00	840,00
04.02	U	**Door 110 cm** Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 110 cm and finished in AISI 304 stainless steel.	2,00	217,73	435,46
04.03	U	**Door 120 cm** Industrial door completely in stainless steel with 40 mm of injected polyurethane. Robust construction, hygienic and resistant. 1 sheet of 110 cm and finished in AISI 304 stainless steel.	21,00	335,53	7.046,13
04.04	U	**Blind door** Blind passage of phenolic compact plates of 3 mm and 33 mm of rigid expanded polystyrene of density 30, glued and impregnated with 25 mm phenolic compact perimeter frame. Dimensions 900x2300mm. Matte silver anodised aluminum frame with delivery range in the whole profile, extruded in two telescopic STAFF model, which allows to cover between 80 and 290 mm.	12,00	446,38	5.356,56

2.5 CHAPTER 5: GLASSWARE

Code	Unit	Description	Quantity	Price (€)	Amount(€)
05.01	U	**Mirror 3mm** Silver mirror made with a colorless 3mm float moon. Silvery on the back side, including perimetral edging and drills.	5,00	83,36	416,80
05.02	m^2	**Glass float colorless planilux 10mm** PLANILUX colorless float glass glazing, 10 mm thick, fixed on sandwich panel with wedges of perimetral and lateral support and cold sealing with colorless silicone, including glass cuts and glazing, according to NTE-FVP-8.	12,42	92,10	1.143,88

2.6 CHAPTER 6: INSTALLATION OF REFRIGERATION

Code	Unit	Description	Quantity	Price (€)	Amount(€)
06.01	U	**Freezing chamber** Freezing chamber fully equipped and installed. Includes room separator panel. Wall thickness 150mm. Dimensions 5150x380x3000mm.	1,00	6.753,83	6.753,83
06.02	U	**Cold chamber** Fully equipped and installed refrigerator. Wall thickness 120mm.	5,00	5.544,66	27.723,30
06.03	U	**Compact cold wall air conditioner 6200 w** Compact refrigeration unit in frame and galvanized steel body with thermosetting polyester paint, with maximum maintenance access through folding panels. With a power of 6200 W.	4,00	3.317,65	13.270,60
06.04	m^2	**Pre-lacquered panel 80mm** Thermal insulation of cold rooms with self-supporting panel formed by two sheets of pre-lacquered steel in commercial profile of 0.5 mm. EPS core polyurethane expanded 20 kg / m3. With a thickness of 80 mm.	251,25	54,20	13.617,75
06.05	U	**Cold chamber door with window** Door made of white lacquered aluminum with internal insulation based on 80 mm thick polyurethane foam, with inspection window, 20 x 20 cm, including watertight joints and all accessories for installation, fully placed.	7,00	231,36	1.619,52

2.7 CHAPTER 7: SANITARY WARE AND TAPS AND FITTINGS

Code	Unit	Description	Quantity	Price (€)	Amount(€)
07.01	U	**Soap dispenser** Supply and installation of liquid soap dispenser with 1-liter push-button, transparent fumé tank and white or black ABS cover, fitted with wall-fixing anchors, and installed.	13,00	19,24	250,12
07.02	U	**Paper towel dispenser** Supply and installation of industrial toilet paper dispenser 250/300 m., With metal housing finished in white epoxy, placed by means of fixing anchors to the wall, and installed.	13,00	22,67	294,71
07.03	U	**Shower** Recommended maximum working pressure 860 kPa (125 psi), recommended temperature range from 40 ° F to 150 ° F (4 ° C to 66 ° C) and dimensions 152x96mm.	4,00	167,65	670,60
07.04	U	**Adapted shower** Shower with suspended seat with back for shower, made in cast nylon with soul in aluminum tube, seat of 400x515 mm, and back of 400x445 mm, even p.p., of placement, complementary material and small material. Measured unit.	2,00	167,65	335,30
07.05	U	**Two-seater sink** Sink on legs with two breasts, built in stainless steel ISI 304 and 316, and dimensions of 600x500x300 mm.	3,00	379,04	1.137,12
07.06	U	**One-seater sink** Worktop with back panel, stamped in 18-10 stainless steel, satin, rounded at the front. Stamped sinus, waterproof welding in the working plane. Open	5,00	540,32	2.701,60

		structure, front panel, tubular legs in 18-10 stainless steel, Ø 50 mm.			
07.07	U	**Shower tap** Shower with flexible arm for prewash tub for dishwasher or sink. With hot and cold water mixer. Installation on the table.	8,00	127,20	1.017,60
07.08	U	**Non manual tap** Group with hot and cold water faucet with elbow-operated control, and long articulated nozzle. For sinks.	8,00	214,90	1.719,20
07.09	U	**Toilet** White vitrified porcelain toilet, low tank, normal series placed by means of stud bolts and screws, even sealed with silicone, and composed by: cup, low tank with lid and mechanisms and seat with lid lacquered, hinged steel, installed, Even with 1/2 "chromed square wrench and flexible hose of 20 cm and 1/2", running.	7,00	146,08	1.022,56
07.10	U	**Adapted toilet** Wall-mounted toilet for handicapped, fixed height, made of cast nylon with aluminum core of 35 mm outer diameter, and 79 cm long, even for mechanical fastening to wall, complementary material and small material. Measure the unit executed.	2,00	184,82	369,64
07.11	U	**Non manual override washbasin** Stainless steel washbasin 18/10 polished on two sides, D = 380 mm and = 1.50 mm, with cylindrical pedestal, chrome plated steel faucet and cold water mixer pedal, 2 "hot valve and chromed siphon, keys 1/2 "chrome square brackets and 20 cm	10,00	370,31	3.703,10

		flexible power hoses, installed and running.			
07.12	U	**Bathroom washbasin** White glazed porcelain washbasin, 56x47 cm., To be fitted in a marble countertop or equivalent (not included), with monobloc tap, with rompechorros and flexible feed connections, including 32 mm drain valve, 1/2 "chrome plated, and flexible hoses of 20 cm and 1/2", installed and working.	6,00	102,52	615,12

2.8 CHAPTER 8: MACHINERY AND UTENSILS

Code	Unit	Description	Quantity	Price (€)	Amount(€)
08.01	U	**Blast chiller** Structure in stainless steel AISI 304, insulation in polyurethane without CFC, thickness of 80 mm. Self-closing door with external handle, lock. Internal safety release button. Useful door light: 825x620x1850 mm. Multipoint probe. USB port for easily downloading HACCP data and updating software. Electric defrosting. Without motor unit, predisposed for separate refrigerating unit. Dimensions 1050x1005x2260mm.	2,00	6.830,20	13.660,40
08.02	U	**Cold closet** Cooling cabinet made with internal and external monobloc structure in stainless steel AISI 304. Storage chamber with zippers in stainless steel AISI 304, 20 positions. Ventilated cooling system, internal evaporator to the storage chamber. Electronic control panel with thermometer - digital thermostat. Electric defrost. Equipped with each compartment: n. 3 guides in stainless steel AISI 304 and n. 3 plastic grids. Dimensions 1500x830x2040mm.	31,00	479,20	14.855,20
08.03	U	**Weighing machine** Industrial scale platform 45x60cm reinforced and folding scale 500kg.	1,00	129,00	129,00
08.04	U	**Central extraction hood** Constructed built in 18-10 AISI304 satin stainless steel. Equipped with 24 filters in 18-10 stainless steel, removable and easy. Washable. 12 socket IP65. Suction flow: 11,600 mc / h. Bell in 4 PARTS.	1,00	943,49	943,49

08.05	U	**Lateral extraction hood** Constructed built in 18-10 AISI304 satin stainless steel. Equipped with 24 filters in 18-10 stainless steel, removable and easy. Washable. 12 socket IP65. Suction flow: 11,600 mc / h. Bell in 4 PARTS.	1,00	734,98	734,98
08.06	U	**Pasta cooker** Pasta cooker made of stainless steel AISI 304, flat thickness 20/10 mm. Stamped vats of stainless steel AISI316L, front unloading of starches with stainless steel, baskets not included. Water immission tap on the hob, manual management of the filling tank. Screws made of galvanized steel. Heating by independent burners controlled by valves. Dimensions 800x920x250mm.	2,00	39.423,64	78.847,28
08.07	U	**Vegetables cutter** Vegetable cutter CA-611 with capacity up to 1000kg / h, built in stainless steel. Dimensions 430x410x760mm	1,00	525,23	525,23
08.08	U	**Packing machine** Heat sealing machine built in stainless steel, built with hygienic design IP 65. Atmospheric MAP packaging and sweeping. Dimensions 2930x1000x1700mm.	1,00	24.983,93	24.983,93
08.09	U	**Vegetable wringer** ES-200 drainer with 12kg load per cycle built in stainless steel. Includes wheels. Dimensions 210x290x320 mm.	1,00	9.307,23	9.307,23
08.10	U	**Fryer**	2,00	25.890,32	51.780,64

		Fryer built in stainless steel AISI304, flat thickness 30/10 mm. Vats stamped and welded to the plane, wide areas of draining and oil decantation; Each cuba: 2 baskets and 1 lid. Mechanical controls. Thermostat temperature control 100-185 ° C. Tubular burners in the tub. Electronic ignition by spark train, safety thermostat. Dimensions 800x920x250mm.			
08.11	U	**Refrigerator** External panels and paving in stainless steel AISI304 Cooling system with fins evaporator. Electronic thermometer / thermostat. Automatic defrosting with hot gas. Evap. Automatic condensation. A door. Dimensions 2010x600x650 mm.	1,00	1.749,71	1.749,71
08.12	U	**Smooth fry top** Fry-top built in AISI 304 stainless steel, flat thickness 30/10 mm. Compound cooking plate (stainless steel AISI 316L + FE). In addition: plate cap. Heating by two independent burner batteries controlled by thermostatic modulating valve, safety thermostat. Control temperature 140-340 ° C. Dimensions 800x920x250mm.	1,00	447,33	447,33
08.13	U	**Grill fry top** Fry-top built in AISI 304 stainless steel, flat thickness 30/10 mm. Fe510D satin steel cooking hob. COOKING PRO SYSTEM. In addition: plate cap. Heating by two batteries of electrical resistors of stainless steel AISI 309,	1,00	524,93	524,93

		safety thermostat. Control temperature 100-270 ° C. Predisposition for remote control of power peaks. Dimensions 800x920x250mm.			
08.14	U	**Fires** Gas cooker built in stainless steel AISI304, flat thickness 20/10 mm. Enameled cast iron grilles and burners. Removable burners with double and mono crown flame distributors, actuated by valves. Pilot spy and thermocouple. Flat under burner stamped and watertight. Dimensions 1200x920x250mm.	6,00	1.607,70	9.646,20
08.15	U	**Oven** Mixed oven with digital display and program library. Smoke, Delta T and Low Temperature programs. Fan with autoinversion sense rotation and 3 speed fan, of which one static. Active control of humidity in cooking. Double level of steam generation. ECO function for the reduction of expenses during cooking and washing. Double hygienizing washing system, with manual insertion of the cleaning liquid. Two washing programs. Structure in stainless steel AISI 304, AISI 316L in firing chamber. Dimensions 920x910x1250 mm.	3,00	8.918,98	26.756,94
08.16	U	**Vegetables washer** Vegetable washing machine built in stainless steel. With production capacity of 20 to 40 kg per load, 220 VAC power is required.	1,00	9.135,34	9.135,34

		Dimensions 1750x1100x1100mm.			
08.17	U	**Pots washer** Structure and frame in AISI 304 stainless steel. Double wall panels, vats and boiler in AISI 316 stainless steel. Balanced control door with half-volatile door, loading basket of trays and kettles in 18-10 stainless steel, electric control panel, N.3 selectable wash cycles, rinse at constant temperature, equipped with rinse aid dispenser, predisposed by HACCP kit. Heat recovery. Dimensions 840x880x2140mm.	1,00	13.805,00	13.805,00
08.18	U	**Slicer** Body in aluminum alloy, blade in stainless steel. Safety switch for para-blade. Complete sharpener with safety switch. Transmission to belt. Three-phase operation. Car with hand protection. Dimensions 660x540x440 mm.	1,00	469,00	469,00
08.19	U	**Pressure cleaner with soap dispenser** Karcher equipment with a maximum flow rate of 600 l / h.	2,00	734,00	1.468,00
08.20	U	**Tray dishwasher** Frame in stainless steel panel with double wall and vats in 18-10 stainless steel. Wash and rinse arm in 18-10 stainless steel. 2 Feed speeds. Working Phase: pre-wash at double wash angle and double rinse. Advance basket: right-left. Working capacity 259	1,00	72.946,23	72.946,23

		baskets / hour. Dimensions 3290x1030x1700 mm.			
08.21	U	**Tilting pot** Rocking pot with a useful volume of 301 l. Built in stainless steel AISI 304 steam version, consumption 80kg / h, electrical connection. Dimensions 1655x1490x1030h.	3,00	22.337,67	67.013,01
08.22	U	**Hot table** Countertop in stainless steel 18-10 AISI 304 thickness 0.8 mm, height 40 mm, sound-absorbing. With posterior breastplate h.100 mm. Intermediate shelf in stainless steel thickness 0,8 mm, adjustable in 3 heights. Sliding doors with double wall, in AISI 304. Stainless steel feet Ø50mm. Stainless steel legs AISI 304 adjustable 60 mm. Ventilated heating W 1250.Dimensions 1500x700x900mm.	2,00	1.083,12	2.166,24
08.23	U	**Hot plate table** Kitchen with electric plates with self-supporting structure of AISI304 stainless steel, flat thickness 20/10 mm. Watertight cast cooking hobs with thermal protection device. Each plate is operated by a 5 position switch. Dimensions 800x920x250mm.	4,00	2.340,00	9.360,00
08.24	U	**Vegetable peeler** Peeler Pi-30. Built in stainless steel, with cycle capacity of 30 kg / cycle. Dimensions 245x300x400	1,00	942,00	942,00
08.25	U	**Mincer**	1,00	3.109,70	3.109,70

		Structure in satin 18-10 stainless steel. Chopping funnel, collection bowl and group for molar in 18-10 stainless steel. Chopping knife in stainless steel with self-fixing. Hand of mortar for meat in PVC. Dimensions 270x370x240mm.			
08.26	U	**Griddle** Fry-top built in AISI 304 stainless steel, flat thickness 20/10 mm. Fe510D satin steel cooking hob. In addition: plate cap. Heating by burner battery controlled by thermostatic valve of modulating action, safety thermostat. Control temperature 140-340 ° C. Dimensions 400x920x250 mm.	1,00	235,44	235,44
08.27	U	**Tilting pan** Tilt pan made of stainless steel AISI304, flat thickness 20/10 mm. AISI 316L stainless steel cooking vessel. Burner battery heating controlled by valved faucet, pilot spy and thermocouple. Rear hinged lid and balanced.	3,00	16.571,24	49.713,72
08.28	U	**Saw for frozen food** Frozen saw with working tray: 465 x 440 mm and saw length of 1650 mm. Power: 750 W. Dimensions 460 x 455 x 870 mm.	2,00	834,32	1.668,64
08.29	U	**Cutting board** Constructed in 18-10 stainless steel with 10/10 satin thickness, brushed medium scotchbrite. Sides to self-supporting tubular box structure. Equipped with removable plain in nylon 1 / 1GN.	3,00	45,00	135,00
08.30	U	**Chopboard**	1,00	200,00	200,00

		Working plane and cut made in nylon food, for meat cutting. Dimension GN 1/1.			
08.31	U	**Ceramic hob** Kitchen with ceramic hob, self-supporting structure in stainless steel AISI304, flat thickness 20/10 mm. Ceran glass ceramic flat, thickness 6 mm. Induction heating. Four separate cooking areas. Sensors recognition pot and automatic control devices. Forced cooling of electronic components. Use cooking vessels of suitable material (minimum Ø 120 mm).	1,00	160,00	160,00

2.9 CHAPTER 9: FURNITURE

Code	Unit	Description	Quantity	Price (€)	Amount(€)
09.01	U	**Locker bench** Mural bench with metal supports painted in the oven in color to choose, and seat based on 3 boards of varnished pine wood, galvanized steel fasteners, assembly and placement.	4,00	122,65	490,60
09.02	U	**Transport trolley with tub** Car tank for vegetable transport. Constructed in 18-10 stainless steel satin finish. Complete with removable perforated bottom and overflow tube with filter. Handle in tubular and 4 castors. Dimensions 880x660x10000 mm.	3,00	156,00	468,00
09.03	U	**Carts for gastronorm trays** Car tank for vegetable transport. Constructed in 18-10 stainless steel satin finish. Complete with removable perforated bottom and overflow tube with filter. Handle in tubular and 4 castors. Dimensions 880x660x10000 mm.	10,00	347,27	3.472,70
09.04	U	**Container set. 1000l** Set of four containers of 100l colors green, brown, blue and yellow, including wheels and flip-top.	1,00	1.200,00	1.200,00
09.05	U	**Pedal bin** Made in 18-10 satin stainless steel, with printed lid and pedal. Container with rotating wheels. Capacity 75 l. 400x605mm.	33,00	122,06	4.027,98
09.06	U	**Warehouse shelf** Complete shelf made of stainless steel 18-10	15,00	108,90	1.633,50

		composed of 8 uprights and 8 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x330mm.			
09.07	U	**Cold chamber shelf** Complete shelf made of stainless steel 18-10 composed of 4 uprights and 4 shelves with omega of reinforcement. Maximum capacity each entrepano kg 200 / m². Dimensions 1200x610x165mm.	54,00	209,00	11.286,00
09.08	m	**Stainless steel table** Worktop in AISI 304 stainless steel thickness 0.8 mm, height 40 mm. Waterproof sound absorbing support panel. Tubular legs in stainless steel, 40x40 mm. Stainless steel leg AISI 304 adjustable in height 60 mm. Mount with screws. Delivered decomposed. Dimensions 750x750x900mm.	35,00	208,21	7.287,35
09.09	U	**Corner table** Worktop in AISI 304 stainless steel thickness 0.8 mm, height 40 mm. Waterproof sound absorbing support panel. Tubular legs in stainless steel, 40x40 mm. Stainless steel leg AISI 304 adjustable in height 60 mm. Mount with screws. Delivered decomposed. Dimensions 750x750x900mm.	8,00	369,98	2.959,84
09.10	U	**Stainless steel trash table** Countertop in satin 18-10 stainless steel, with rear panel h 60 mm, thickness 12/10. Water-repellent and fireproof absorbent pad.	5,00	480,70	2.403,50

		Countertop suitable to support weights max. 150 kg / m² thanks to 4 tubular legs in stainless steel, Ø 50 mm. Eye Ø 24 cm forms one piece with the worktop. Dimensions 2000x700x900 mm.			
09.11	U	**Locker** Locker for clothing in cold rolled steel, with anti-phosphating and anticorrosive treatment, in color to choose with oven dried paint, with lock, shelf and tube hanger, ventilation slats on door and measures 1.80x0.50x0.30 m, placed .	28,00	25,00	700,00
09.12	U	**Pallet truck** Hand pallet truck with reduced lift, from 0.75 to 3 tons of load capacity.	1,00	277,09	277,09

3 SUMMARY OF PARCIAL CHAPTERS

Table 58 Parcial chapters summary

Chapter	Summary	Price (€)	% OB
1	Masonry and closings	48.315,84	6,42
2	Flooring, tiling and paiting	105.399,26	14,01
3	Exterior carpentry	2.740,88	0,36
4	Interior carpentry	13.678,15	1,82
5	Glasware	1.560,68	0,21
6	Installation of refrigeration	62.985,00	8,37
7	Sanitary ware and taps and fittings	13.836,67	1,84
8	Machinery and utensils	467.419,81	62,15
9	Furniture	36.206,56	4,81
OVERALL BUDGET (OB)		**752.142,85**	100

The overall budget of the oeuvre "Central kitchen design as a special employment center" is equal to the amount of **SEVEN THOUSAND FIFTY TWO HUNDRED FORTY TWO and EIGHTY FIVE CENTS** (752.142,85 €).

4 GLOBAL BUDGET

Table 59 Global budget

Overall budget (OB)	752.142,85 €
8% of general expenses	60.171,43 €
6% of industrial profit	45.128,57 €
21% IVA	157.950,00 €
TOTAL CONTRACT EXECUTION BUDGET	**1.015.392,85 €**

The contract execution budget, including I.V.A., of the project "Central kitchen design as a special employment center" is equal to the amount of **ONE MILLION FIFTEEN THOUSAND THREE HUNDRED NINETY TWO and EIGHTY FIVE EUROS** (1.015.392,85 €).