MAINTENANCE MANAGEMENT

MAINTENANCE TEAM

WORKERS AND PROFESSIONAL TRAINING

LABOR RISK PREVENTION CULTURE

ELECTRIC RISK

EVALUATION OF THE MAINTENANCE SERVICE

MIGUEL LÓPEZ RÍOS

Industrial Engineer

mlopezrios@coiico.com

Project Designer / Planning / Management

Consultancy / Training

SHEng

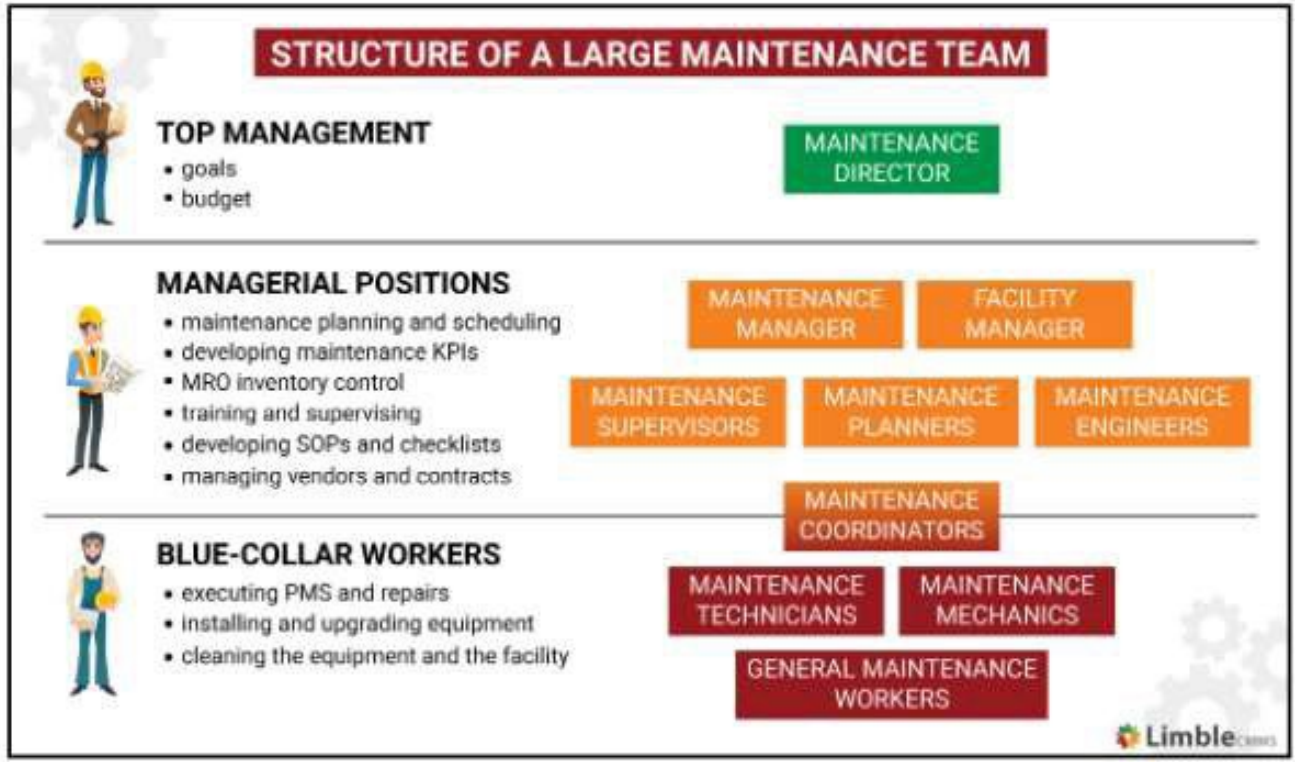
SMART HEALTHCARE ENGINEERING

2023-1-RO01-KA220-HED-000159985

Co-funded by the European Union

INTRODUCTION TO MAINTENANCE

WORKERS AND PROFESSIONAL TRAINING



The maintenance team at this level is made up of professionals from different trades.

Jobs in this occupation typically require an Engineer´s Degree (Ing. Sup).

Jobs in this occupation typically require a Diploma of Higher Education (Ing. Técn) or an Engineer´s Degree (Ing. Sup).

Jobs in this occupation typically require a Vocational Education and Training (FPI) or Certificate of Higher Education (FPII).

Electrician

Plumber

Refrigeration Techn.

Mechanic

Jobs in this occupation typically require a high school diploma or equivalent.

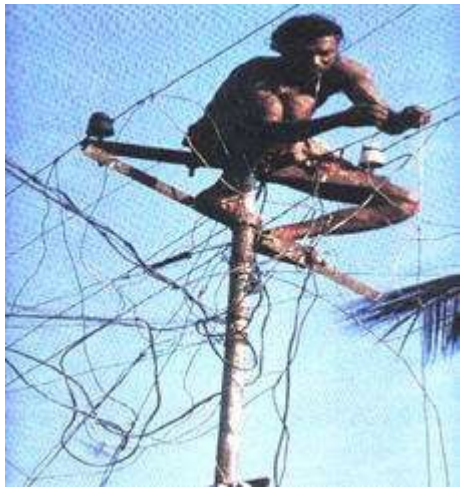
Builder

Carpenter

Painter

INTRODUCTION TO MAINTENANCE

LABOR RISK PREVENTION CULTURE



DANGER

It is the characteristic of a situation, material or equipment capable of causing harm to people, the environment or heritage.

LABOR RISK

Possibility of a worker suffering a certain **damage** derived from work.

To **classify a risk** (from the point of view of its severity) it is necessary to jointly assess the **PROBABILITY** of damage occurring and the **SEVERITY** of the same.

Thus, when the probability of it materializing and the consequences that may occur are associated with the dangerous situation, we are faced with a RISK situation.

The materialization of the risk in people can occur suddenly and unexpectedly in the form of a **WORK ACCIDENT**.

The control of risk situations is the objective of Occupational Risk Prevention.

RISK ASSESSMENT

SAFETY

WORK ACCIDENT

Any bodily injury that the worker suffers due to or as a consequence of the work he or she performs.

INDUSTRIAL

REBT
RAPQ
RSCIEI
RAP
Etc.

WORK

Reglamento de Servicios de Prevención
Disposiciones mínima de Seguridad y Salud en el Trabajo
Señalización de Seguridad y salud en el Trabajo
Disposiciones mínimas…manipulación de cargas
Disposiciones mínimas…atmósferas potencialmente explosivas
Etc.

INTRODUCTION TO MAINTENANCE

LABOR RISK PREVENTION CULTURE

Planning and Design
Once risks have been identified, it's time to plan and design prevention measures. This may involve changes in work processes, investment in safety equipment, or even redesigning facilities to minimize risks.

Training and Awareness
After designing the measures, it is important to train employees in their application and correct use.

Communication and Participation
Effective communication is crucial for everyone in the organization to understand the importance of the prevention culture. Employee participation in the process not only improves implementation but also increases adherence to safety measures.

Implementation and Monitoring
Once prevention measures are in place, continuous monitoring is crucial to ensure compliance and effectiveness. This will also allow you to make adjustments in case of issues or changes.

The "risk prevention culture" refers to a philosophy in which the safety and health of employees are fundamental priorities in the daily operations of a company. This goes beyond having safety measures; it involves integrating safety practices into all activities and levels of the organization. The goal is to minimize risks and accidents in the workplace, fostering a safe and healthy work environment.

INTRODUCTION TO MAINTENANCE

LABOR RISK PREVENTION CULTURE

CARZY THINGS

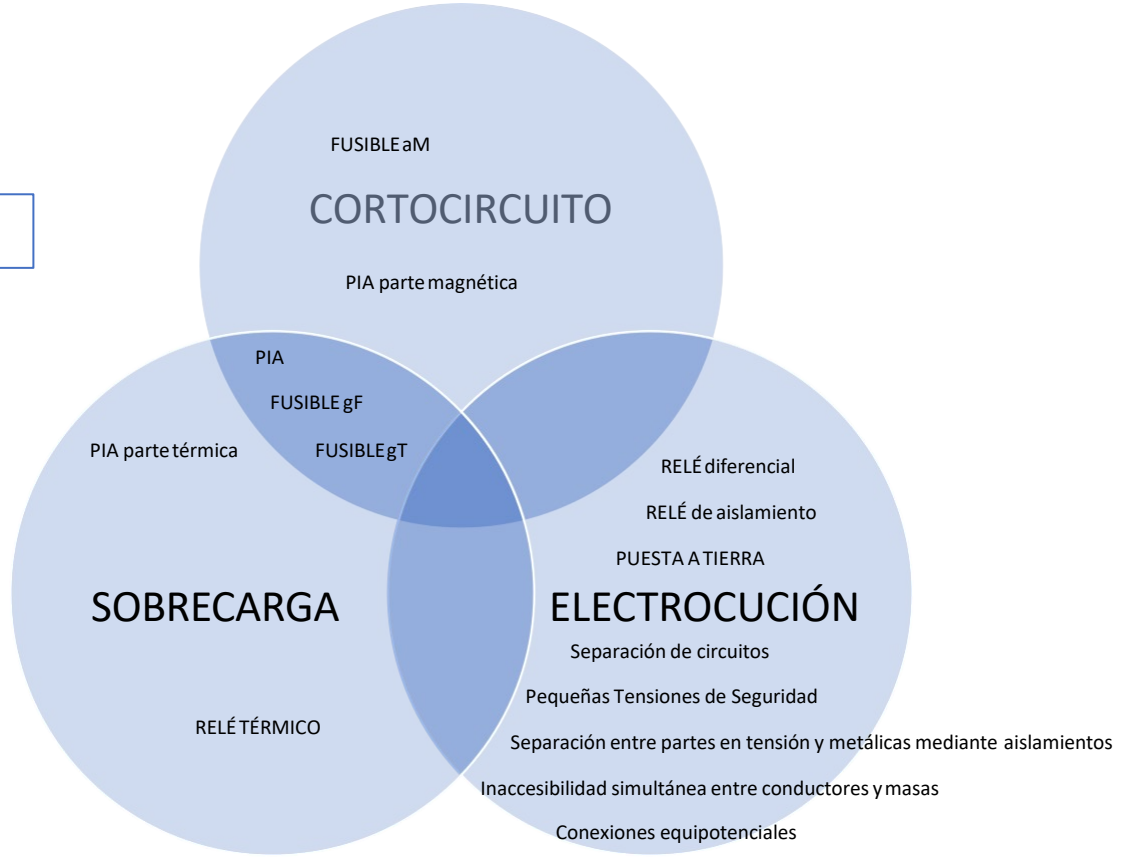
MISLEADINGS

CHEMICAL RISK

ELECTRIC RISK

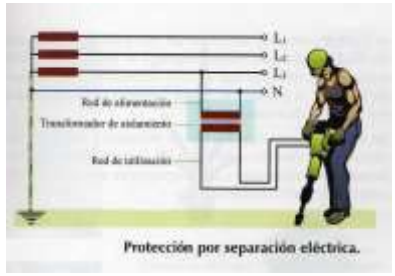
INTRODUCTION TO MAINTENANCE

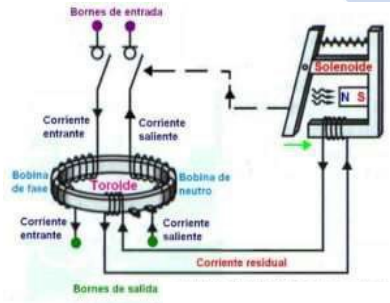
ELECTRIC RISK



INTRODUCTION TO MAINTENANCE

ELECTRIC RISK





FUSIBLE aM

CORTOCIRCUITO

PIA parte magnética

PIA

FUSIBLE gF

PIA parte térmica

FUSIBLE gT

RELÉ diferencial

RELÉ de aislamiento

PUESTA A TIERRA

SOBRECARGA

ELECTROCUCIÓN

Separación de circuitos

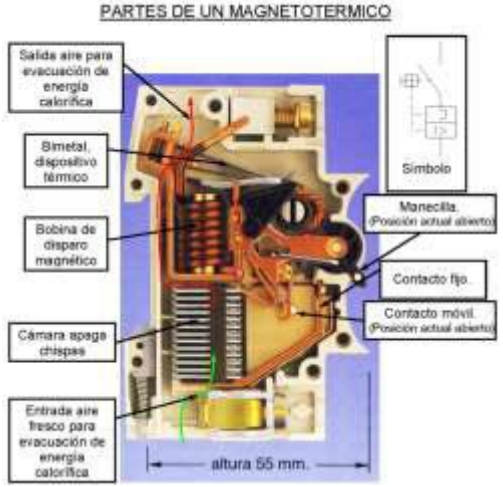
Pequeñas Tensiones de Seguridad

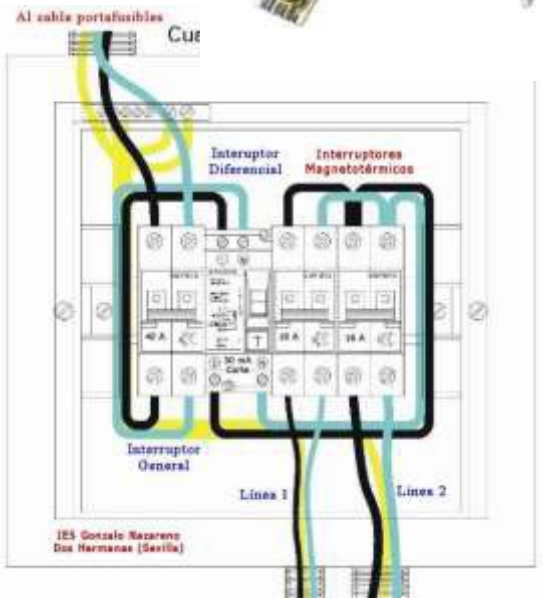
RELÉ TÉRMICO

Separación entre partes en tensión y metálicas mediante aislamientos

Inaccesibilidad simultánea entre conductores y masas

Conexiones equipotenciales





INTRODUCTION TO MAINTENANCE

A **maintenance metric** is any datapoint an organization tracks. Maintenance metrics track the employees, machines, operations, and inventory that influence whether you reach your goals. Common maintenance metrics include Mean Time to Repair (MTTR), Mean Time Between Failures (MTBF), and Overall Equipment Effectiveness (OEEE).

Maintenance Key Performance indicators (KPIs) evaluate factors critical to an organization's success. They are used to measure performance against goals related to machine failures, repair times, maintenance backlogs, and costs. It is a benchmark for measuring the performance of maintenance personnel or teams in achieving their goals. Maintenance KPIs are specific targets, like "decrease downtime by 25%," for tracking progress in accomplishing bigger goals like preventing downtime, reducing costs, or strengthening machine reliability. A KPI is the combination of a **metric**, like downtime, and a **benchmark**, like a decrease of 25%, that quantifies success for a goal, like preventing downtime. A good KPI is true to the SMART acronym of Specific, Measurable, Achievable, Realistic, and Timely.

EVALUATION OF THE MAINTENANCE SERVICE

SMART

Specific: What are the 5 W's of the goal? (Who, What, When, Where, Why)

Measurable: What are the measurable and essential components of the goal?

Achievable: Have you or a competitor attained this goal in the past?

Realistic: Is reaching your goal practical in your current state?

Timely: Did you map out the time it will take to obtain your goal?

A leading indicator signals future events and includes metrics like Preventative Maintenance Compliance or Estimate vs. Actual Performance

Lagging indicators include maintenance metrics like Mean Time Between Failure (MTBF) and Mean Time to Repair (MTTR)

Some common examples of maintenance goals around which metrics and KPIs focus include:

- Reducing Costs
- Reducing Failures
- Reducing Downtime
- Increasing Work Identification
- Increasing Work Planning
- More Effective Work Scheduling
- More Effective Work Execution

The information that matters for maintenance goals is different for every company, so it's important to understand how every aspect of the business affects reaching the goals set.

INTRODUCTION TO MAINTENANCE

Availability calculates the percentage of time that equipment is operational and available for use, reflecting the overall effectiveness of maintenance processes.

Reliability assesses the probability that a machine or system will perform its intended function adequately for a specified period under typical conditions.

Maintenance Backlog quantifies the maintenance work that has been identified but not yet completed, providing insight into the potential future workload.

Machine Downtime tracks the time equipment is not operational due to breakdowns or maintenance, directly impacting productivity.

EVALUATION OF THE MAINTENANCE SERVICE

Maintenance Cost as a Percentage of Estimated Replacement Value (MC/ERV): This metric compares the annual maintenance cost to the replacement value of the assets, helping to gauge the financial efficiency of maintenance expenditures.

Distribution by Types of Maintenance break down maintenance activities by type, such as preventive, predictive, and corrective, allowing for analysis of maintenance strategies and their effectiveness

Mean Time Between Failures (**MTBF**) is the elapsed time between failures of a system during operation. For critical pieces of equipment, MTBF is an important way to discern the performance of an asset. It is an important way to quantify the reliability of an asset and predict future performance. Organizations can leverage MTBF to determine preventive maintenance tasks such as rate of inspections or introduce preventive actions such as lubrication, greasing, and calibrations. This can help to avoid unexpected failures and reduce the risk of performing unneeded maintenance on a piece of equipment.

$$\text{MTBF Calculation} = \frac{\text{Sum of (Start of Downtime} - \text{Start of Uptime)}}{\text{Number of Failures}}$$

Mean Time To Repair (**MTTR**) is a basic measure of the maintainability of repairable items. It represents how long a piece of equipment is out of production, or the average time required to repair a failed component or device. By tracking and monitoring this data, organizations can get a better understanding of necessary staffing, inventory management, and repair vs. replace decisions based on data. It also introduces a method to understand how well an organization responds to repairs and equipment problems.

$$\text{MTTR Calculation} = \text{Sum of Downtime Periods} \div \text{Number of Downtime Periods} = \text{MTTR}$$

INTRODUCTION TO MAINTENANCE

EVALUATION OF THE MAINTENANCE SERVICE

Overall Equipment Effectiveness (OEE) evaluates how effectively a piece of equipment is utilized. It identifies the percentage of planned production time that is truly productive.
The OEE calculation is based on this three factors:

OEE = Availability x Performance x Quality

Availability Loss = Run Time / Planned Production Time
Performance Loss = (Ideal Cycle Time × Total Count) / Run Time
Quality Loss = Good Count / Total Count

Good Count: no defects in the production.
Ideal Cycle Time: the theoretical fastest possible time to produce one piece.
Planned Production Time: the total time that the production asset is scheduled for production.
Fully Productive Time: producing only good pieces, as fast as possible, with no stop time.

Benchmark your OEE score against industry standards for discrete manufacturing and strive for world class results.

OEE is the ratio of Fully Productive Time to Planned Production Time. Schedule Loss is not included in OEE calculations since there is no intention of running production.

MAINTENANCE MANAGEMENT

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

INTRODUCTION

PHYSICAL ASSETS IN HOSPITAL BUILDINGS

ORGANIZATIONAL MODEL

MIGUEL LÓPEZ RÍOS

Industrial Engineer

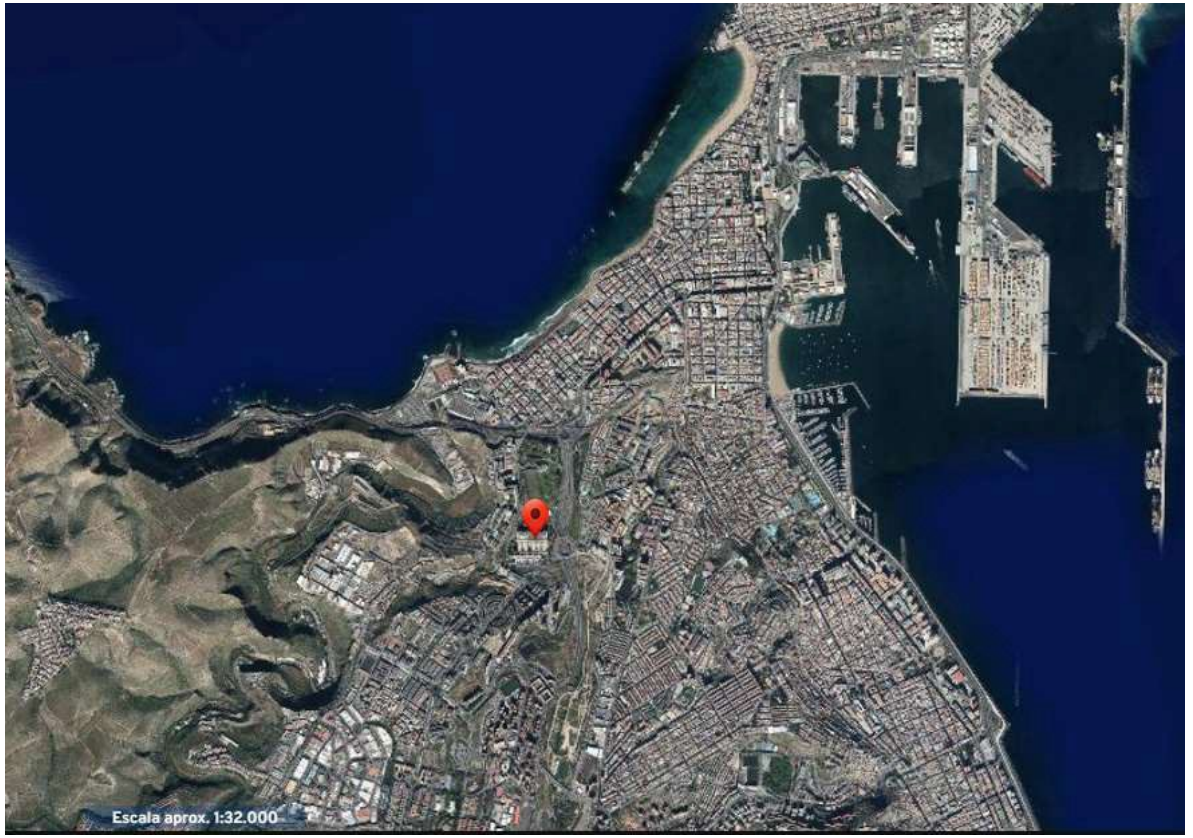
mlopezrios@coiico.com

Project Designer / Planning / Management

Consultancy / Training

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

INTRODUCTION



HUGCDN

Hospital Universitario de Gran Canaria Dr. Negrín

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

INTRODUCTION

"The HUGCDN is an infrastructure that was inaugurated in 1999, with 220.000 m², 800 beds, 22 operating rooms, 6 linear accelerators, with a heated surface greater than 85%, with 9.000 kWt refrigerators installed, with high relative humidity almost all year round, which forces a lot of energy to be used in dehumidification, and a building technical management system with 32.000 control points."

HUGCDN

Hospital Universitario de Gran Canaria Dr. Negrín

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

INTRODUCTION

The need to provide coverage for the complex equipment that hospital centers house, the requirement to preserve safety in them, and the demand for quality of the services provided in them, require the implementation of a set of planned and systematic processes, aimed at preserving buildings in optimal conditions of safety, use, comfort and aesthetics, during the long period of their useful life.

The maintenance service of a hospital must be planned to achieve the objectives of Safety, Reliability, Comfort and Profitability.

Safety and Reliability are common to almost any process or building.

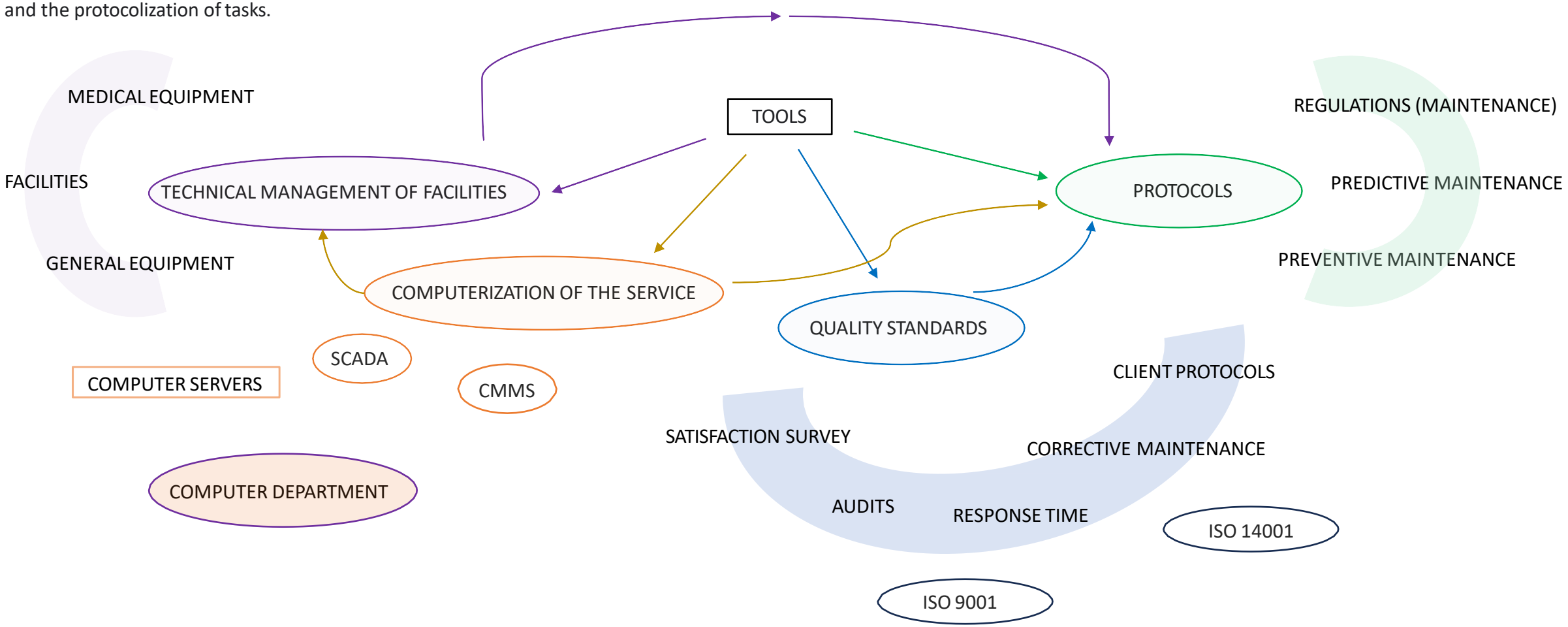
Profitability is essential since maintenance costs reach significant figures in the budget of hospital centers, so an efficient maintenance service must be planned, which offers a quality service at the lowest possible cost.

Comfort is a requirement of the society that uses and pays for the services, and can be summarized as the degree of satisfaction of the users, who in a hospital center are the patients and family members and the center's own workers.

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

INTRODUCTION

The achievement of these objectives requires the rational use of tools such as the technical management of facilities, the computerization of the service, the use of quality standards and the protocolization of tasks.



ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

INTRODUCTION

The need to provide coverage for the complex equipment that hospital centers house, the requirement to preserve safety in them, and the demand for quality of the services provided in them, require the implementation of a set of planned and systematic processes, aimed at preserving buildings in optimal conditions of safety, use, comfort and aesthetics, during the long period of their useful life.

The maintenance service of a hospital must be planned to achieve the objectives of Safety, Reliability, Comfort and Profitability.

Safety and Reliability are common to almost any process or building.

Profitability is essential since maintenance costs reach significant figures in the budget of hospital centers, so an efficient maintenance service must be planned, which offers a quality service at the lowest possible cost.

Comfort is a requirement of the society that uses and pays for the services, and can be summarized as the degree of satisfaction of the users, who in a hospital center are the patients and family members and the center's own workers.

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

PHYSICAL ASSETS IN HOSPITAL BUILDINGS

- Operating Room
- Intensive Surveillance Units
- Technical rooms
- X-ray Areas
- Heliport
- Laboratories
- Guest rooms
- Industrial Laundry
- Industrial kitchen
- Restaurants
- Shops
- Conference rooms
- Parking
- Administration Office
- Storage Rooms

.....

- HVAC (Heating, Ventilating, Air Conditioning)
- Hot Water System
- Electrical System
- Water supply system
- Refrigeration
- Fire Protection System
- Electrical System
- Sanitation System
- Thermal Generation Boilers
- Sanitation System
- Fuel Storage System
- Compressed Air installation
- Pneumatic installation
- Steam installation
- Medical gas installation
- Cryogenic facilities
- Telecommunication Systems
- Transport systems and elevators

.....

https://www3.gobiernodecanarias.org/sanidad/scs/scs/as/gc/29/memorias/23/gestion/index.htm

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

PHYSICAL ASSETS IN HOSPITAL BUILDINGS

ELECTROMEDICAL EQUIPMENT

PHYSICAL AND TEHCNOLOGICAL RESOURCES

BUILDING FACILITIES

GENERAL EQUIPMENT

Recursos físicos y tecnológicos

Área de Hospitalización	2023
Hospital Universitario G.C. Dr. Negrín	
Camas Instaladas	727
Camas funcionantes (media anual)	648
Médicas	420
Quirúrgicas	177
Unidad de Medicina Intensiva	39
Unidad de Reanimación	12

Área de Hospital de día	2023
Puestos Funcionantes	96
Hospital de día Oncológico	23
Hospital de día Hematologico (*)	16
Hospital de día Medicina Interna	16
Hospital de día Polivalente	24
Hospital de día Radioterapia	6
Hospital de día Cardiología	8
Hospital de día Psiquiatría	3

Área de Consultas Externas	2023
Nº Locales CC.EE.	215
Hospital Universitario G.C. Dr.Negrín	191
C.A.E. Arucas	13
C.A.E. Gáldar	11

Área de Cirugía Convencional	2023
Quirófanos Funcionantes (media anual)	13
Cirugía Programada	12
Cirugía Urgente	1
Camas de URPA (Unidad Recuperación Post-anestésica)	18

Área de Cirugía Ambulatoria	2023
Quirófanos Funcionantes (media anual)	5
Hospital Universitario G.C. Dr.Negrín	4
Hospital San Roque de Guía	1
Camas de URPA (Unidad Recuperación Post-anestésica)	12
Sillones URPA (Unidad Recuperación Post-anestésica)	12

Área de Urgencias	2023
Camas aislamiento	2
Camas observación	61
Camas críticos	8
Sillones Respiratorio	12
BOX Emergencia	1
BOX Observación	35
BOX Observación Psiquiatría	9
Salas de consulta	21

Tecnologías diagnóstico-terapéuticas	2023
Aceleradores Lineales (1)	7
CIBER.Robotizado (Radiocirugía robótica)	1
Equipo de Hipertermia	1
Braquiterapia	2
Angiógrafos digitales	9
Neuronavegador	1
Robot Da-Vinci	1
Gammacámaras-SPECT (2)	3
Litotriptor por ondas de choque	1
Equipos de Hemodiálisis Unidad	31
Equipos Nefrología Otras Técnicas	11
Equipos de Hemodiálisis Concertados	87
Equipos de Endoscopias Digestivas	19
Salas de Hemodinámica / Electrofisiología	3
Salas Radiodiagnóstico	30
Convencionales	14
HUGC Dr. Negrín	6
CAE's y Centros de Salud	8
Telecomandadas	1
Mamógrafos	1
Ecógrafos (Rx ,Radiología Vascular,Eco Mama)	9
Resonancia Magnética	2
Tomografía Axial Computerizada	3
Ecógrafos otros servicios	61
Simuladores	1
P.E.T.- T.A.C.	1
Densitómetros Óseos	1
Broncoscopio	1
Láser Oftalmológico	2
Retinógrafo no midriático	1
Audiómetros	1
Respiradores ventilación mecánica invasiva	124

(1) Incluye unidades de Fuerteventura y Lanzarote
(2) Concertadas.

Tecnologías de soporte logístico	2023
Regulación y control automatizado del edificio.	
Sistema de transporte robotizado.	
Sistema de acumulación de energía térmica para refrigeración.	
Producción de agua ultrapura por ósmosis inversa.	
Digitalización de la imagen.	
Sistema automatizado de dispensación de farmacia.	
Software corporativos de Gestión clínica, económica y de recursos humanos.	
Sistemas de monitorización (red de datos, servidores, servicios y plataformas software).	
Sistema de integración de plataformas.	

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL

There may be several possible ways of organizing hospital maintenance, but in all of them it will be a multidisciplinary service in which there are sections dedicated to production and administrative and technical departments that act transversally with all sections.

The Maintenance Service will have management autonomy and its own budgetary and analytical accounting. It will have the ability to subcontract services and supplies with third parties. It will have a Department head and will be made up of several disciplines with its own section head.

The sections will be organized attending to an installation or a set of equipment of a similar nature. Usually the section of electromedicine takes charge of electromedical equipment.

The sections will be organized attending to an installation or a set of equipment of a similar nature. Usually the section of electromedicine takes charge of electromedical equipment.

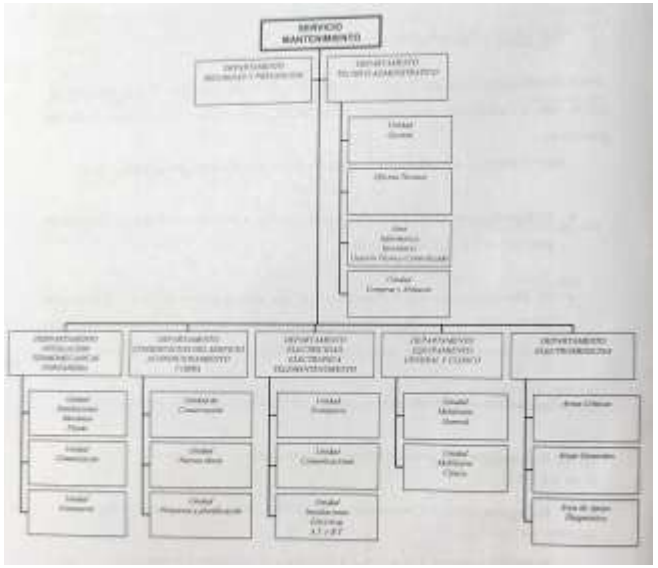
The execution of the service will be carried out by a large team of professionals with a permanent presence at the hospital (24x7).

Each professional has the appropriate technical solvency for their level of responsibility.

The heads of the operational departments have unit managers or workshop or equipment leaders. These workers, in addition to the tasks of their trade, assume responsibility for the care of the workshop and its equipment and assume leadership of the night shifts

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL



Fuente: "Experto en Mantenimiento de Instalaciones de Edificios" (Wenceslao Berriel)

- MAINTENANCE SERVICE
  - SAFETY AND PREVENTION DEPARTMENT
  - ADMINISTRATIVE AND TECHNICAL DEPARTMENT
    - Management Unit
    - Technical Office
    - Computing, Inventory and Technical Management Center Area
    - Logistics and Purchasing Unit
  - THERMAL AND MECHANICAL INSTALLATIONS DEPARTMENT
    - Fluid and Mechanics Unit
    - Clima Unit
    - Plumbing Unit
  - BUILDING CONSERVATION DEPARTMENT
    - Conservation Unit
    - Restorations Unit
    - Projects and Plans Unit
  - ELECTRICITY AND ELECTRONICS DEPARTMENT
    - Transports Unit
    - Communications Unit
    - Electrical Installations Unit
  - GENERAL EQUIPMENT DEPARTMENT
    - General Furniture Unit
    - Clinic Furniture Unit
  - ELETROMEDICINE DEPARTMENT
    - Critical Areas Unit
    - General Areas Unit
    - Diagnosis Areas Unit

- Service Director
  - Department Head
    - Area Manager
      - External Services
    - Workshop Leader
      - Workers

https://www3.gobiernodecanarias.org/sanidad/scs/scs/as/gc/29/memorias/23/gestion/index.htm

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL

"The Engineering Department is responsible for industrial maintenance, information technology, electromedicine, the security of facilities and infrastructure works of the Management Department. Carry out the planning of new industrial projects, information systems and the implementation of machines and diagnostic and treatment equipment, for improvement, expansion or renovation of the facilities and buildings dependent on the Management Department, directing the combination of the three areas according to the needs in each case. Together with the necessary departments of the SCS, it defines priorities for new projects and works. In addition, it manages the execution and the necessary financial resources.

The Engineering Department manages more than 240 people; 90 people from the SCS' own staff and another approximately 150 people from specialized service contracts. Performs more than 110,000 work orders per year that include more than 300,000 annual preventive maintenance operations. It also manages more than 40 million euros by activity, projects, renovations and new implementations."

MEMORIA 2023

HOSPITAL UNIVERSITARIO DE GRAN CANARIA DOCTOR NEGRÍN

Nuestra Organización | Gestión | Docencia | Investigación

Gestión

- Asistencial
- Personas
- Económico-Financiera
- Ingenierías
- Servicios Generales
- Gestión de la Calidad
- Gestión de la Información
- Gestión de la Comunicación
- Memoria resumen
- Buscador
- Abreviaturas
- Mapa web

Está Vd. en Gestión >> Ingenierías

Gestión >> Ingenierías

Servicio de Mantenimiento
Servicio de Informática
Servicio de Electromedicina

Luis Fernando Talavera Martín
Director de Ingeniería

La Dirección de Ingenierías tiene responsabilidad sobre el mantenimiento industrial, la informática, la electromedicina, la seguridad de las instalaciones y las obras de infraestructuras de la Dirección Gerencia. Realiza la planificación de nuevos proyectos industriales, de sistemas de información y de implantación de máquinas y equipamiento de diagnóstico y tratamiento, para mejora, ampliación o reforma de las instalaciones y los edificios dependientes de la Dirección Gerencia, dirigiendo la combinación de las tres áreas según las necesidades en cada caso. Junto con los departamentos necesarios del SCS define las prioridades sobre nuevos proyectos y obras. Además, gestiona la ejecución y los recursos económicos necesarios.

La Dirección de Ingenierías gestiona más de 240 personas; 90 personas de personal propio del SCS y otras 150 personas, aproximadamente, de contratos de servicios especializados. Realiza más de 110.000 órdenes de trabajo al año que incluyen más de 300.000 operaciones de mantenimiento preventivo anuales. También gestiona por actividad, proyectos, renovaciones y nuevas implantaciones más de 40 millones de euros.

Durante el 2023 se han realizado proyectos y mejoras en las instalaciones industriales e infraestructura, unido a equipamiento electromédico que se pone a disposición de los profesionales; con la particularidad, en 2023, de la ejecución de aproximadamente 20 millones de euros adicionales en nuevas obras, instalaciones y equipamiento proveniente de los fondos de Recuperación de la UE, entre las que se pueden enumerar salas de Radiología Vascular Intervencionista, salas de Hemodinámica, nuevo TAC espectral, renovación de TAC convencional, HIFU asociado a una sala de resonancia, microscopio y lasers para cirugía, ecógrafos, torres de laparoscopia, renovación de todas las mesas quirúrgicas, sala de litotricia, máquinas de radiología convencional de HUGCDN y centros periféricos, braquiterapia, PET-TAC, puesta en macha de Hospital Polivalente del HJCI, renovación parcial de Banco de Sangre, Hospital de Día de Hematología.

Por otra parte también se han realizado intervenciones de infraestructuras de la Dirección Gerencia, como la renovación de esterilización de vapor, adaptación de quirófano para trasplante pulmonar, boxes adicionales de UMI, refuerzo de diversas zonas de terreno en los muelles de carga del HUGCDN, mejora en los sistemas de extinción de archivos varios, renovación de producción térmica en HJCI, obras de recuperación de la fachada del HJCI, nuevo centro de transformación en alta tensión del CAE de Gáldar, y renovaciones de los hospitales de día, consultas, y ventanas en la Casa del Mar.

En relación a Informática y sistemas de información se ha desplegado red Wifi para empleados y dispositivos electromédicos, actualizado las plataformas de los terminales de los diferentes fabricantes, ampliación de servicios a UMI y Farmacia, ente otros, y mejoras en la gestión de las redes de comunicación y conexión con el exterior, entre otras acciones.

Toda esta actividad es fruto del trabajo multidisciplinar, en el que intervienen las tres áreas que se agrupan en la Dirección de Ingenierías.

Edita: Dirección Gerencia del Hospital Universitario de Gran Canaria Doctor Negrín
Elabora: Servicio Gestión de la Información
Colaboran: Unidad de Comunicación y Unidad de Ilustración e Imagen

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL

WORK ORDER SYSTEM

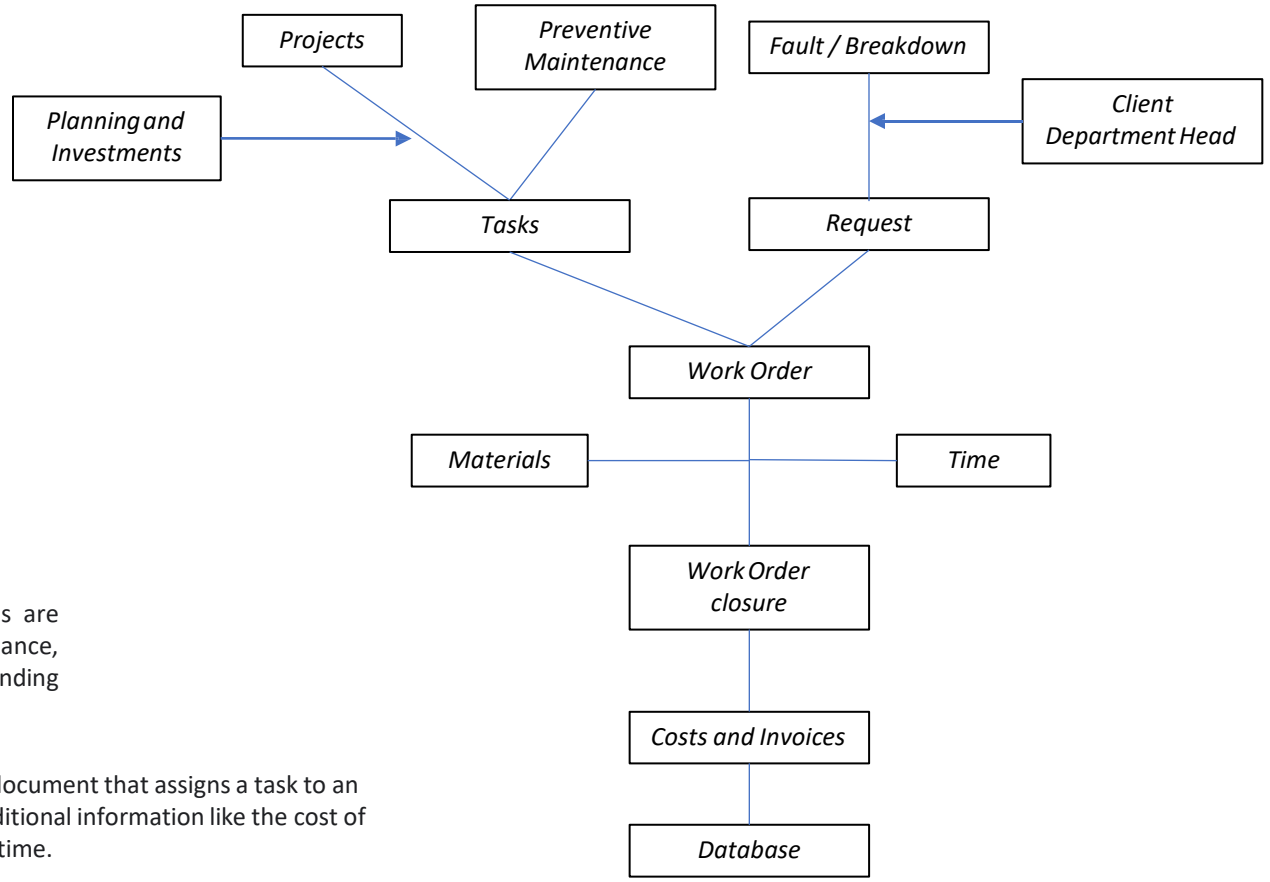
Those responsible for the different cost centers that have been designated as clients in the system, and related to the assets that have previously been assigned to them in the database at the time of inventory, will formulate the corresponding request electronically

Each client can have the possibility of consulting their requests and knowing their status

Urgent work can be carried out that could not be previously scheduled

Added to the set of tasks derived from customer notifications are those that are the result of scheduled preventive maintenance, which, being predefined for a specific date, adds to the pending tasks for that date

The work order is the document that assigns a task to an operator, including additional information like the cost of materials and working time.



When the work order must be executed by subcontracting with third parties, those responsible for the corresponding department will define the nature of the external order, which will generate the corresponding communication.

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL

RESPONSE TIMES

Those actions whose effectiveness depends fundamentally on the immediacy of their execution will be classified as emergent actions. The remaining actions will be classified as ordinary.

Those in which one or more of the following circumstances occur will be classified as critical breakdowns or dysfunctions: compromising the safety of people, compromising the continuity of the activity of entire functional units of the hospital, compromising the continuity of the expected life of elements of the building, facilities, elements of equipment of high value or essential function.

Once a breakdown or dysfunction is detected, it will be corrected within the response times defined in the protocol, counted from the moment of notification. An example could be, for urgent actions, start before 30 minutes and resolution before 60 minutes. For ordinary actions, start or proposed start period within 60 minutes and resolution within 24 hours.

When the period necessary to provide a definitive solution to the problem is longer than the admissible period according to the admissible protocol deadlines for reasons of security or continuity of the care activity, the Service Management will seek provisional solutions for immediate execution, subsequently proceeding to execute the definitive solution.

https://www3.gobiernodecanarias.org/sanidad/scs/scs/as/gc/29/memorias/23/gestion/index.htm

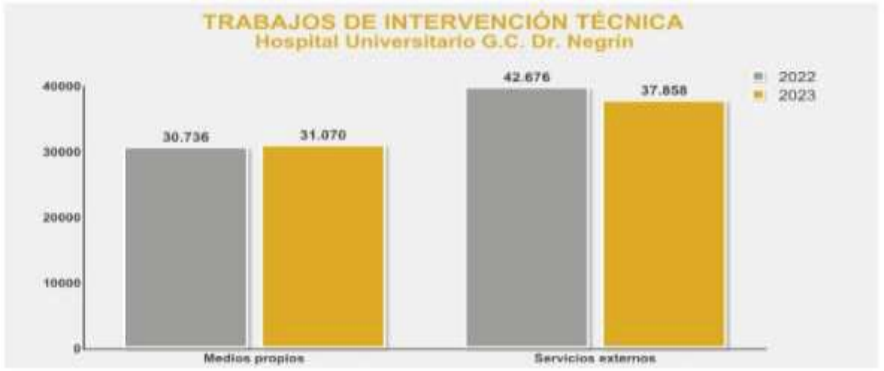
ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL

REPORTS, INTERVENTIONS AND RELEVANT ACTIVITY

TRABAJOS DE INTERVENCIÓN TÉCNICA

CLASIFICACIÓN DE LAS INTERVENCIONES	HOSPITAL UNIVERSITARIO DE G.C.DR. NEGRÍN		
	2022	2023	%VAR
Medios Propios	**30.736**	**31.070**	**1,09**
Correctivos	19.499	20.127	3,22
Preventivos	10.081	9.718	-3,60
Acondicionamientos	1.156	1.226	6,06
Servicios Externos	**42.676**	**37.858**	**-11,29**
En Contrato de Mantenimiento	41.850	36.906	-11,81
Correctivos	18.879	14.230	-24,63
Preventivos	22.971	22.676	-1,28
Sin Contrato de Mantenimiento	826	952	15,25



Actividad relevante 2023

HOSPITAL UNIVERSITARIO DE GRAN CANARIA DOCTOR NEGRÍN

- Acondicionamiento de instalaciones para implantación de la Sala RVI 2
- Acondicionamiento de instalaciones para implantación de la sala RVI 4
- Reforma de instalaciones y obra civil para nuevo PET TAC
- Acondicionamiento de instalaciones para implantación de la sala Litotricia
- Nueva sala para implantación de nuevo TAC 4. Instalaciones y obra civil
- Acondicionamiento de instalaciones para implantación de renovación de TAC 1
- Ejecución de proyecto de instalaciones y obra civil creación nuevos 6 boxes UMI
- Sustitución de mesas quirúrgicas de todos los quirofanos
- Renovación esterilizador de vapor en Servicio de Esterilización
- Renovación de planta de hospitalización 3BI
- Ampliación y renovación de instalación electrica de Ud. de Investigación
- Reformas varias en Unidad de Investigación, reorganización de espacios,
- Adecuación de instalación eléctrica de quirófano n.º 5, adaptado a necesidades de trasplante de pulmón
- Reforma de instalación de propano en cocina
- Acondicionamiento de instalaciones para implantación de sala Hemodinámica C
- Instalación de 13 lavamanos en urgencias
- Acondicionamiento de instalaciones para implantación de espacio C Vascular Velocimetría Doppler
- Inicio de obra de instalaciones para nueva sala blanca en Banco de Sangre
- Acondicionamiento del espacio para carrusel de Farmacia
- Reforma Área de Extracción y Toma de Muestras de Consultas Externas.
- Acondicionamiento de instalaciones para renovación de equipo de instalación Braquiterapia
- Rellenado y adecuación de vial por hundimiento en zona Oeste
- Renovación de las puertas de acceso a fachada Norte. Nivel -1
- Obra civil de refuerzo con micropilotes y saneado de terreno en muelle B
- Acondicionamiento de instalaciones en Sala de Resonancia para instalación de HIFU
- Reconstrucción de Marquesina oeste de consultas externas. Obra civil
- Instalación de nuevas centrales de detección de incendios en Archivos de Historias Clínicas
- Acondicionamiento de instalaciones para nueva sala de RX convencional
- Renovación de instalaciones en central esterilización para nueva central del lavado. Inicio de trabajos
- Nuevos puntos de gestión de turnos en consultas
- Reparación de vial acceso nivel 0

MAINTENANCE MANAGEMENT

ORGANIZATIONAL AND MANAGEMENT MODEL FOR THE HOSPITAL MAINTENANCE SERVICE

ORGANIZATIONAL MODEL

REPORTS, INTERVENTIONS AND RELEVANT ACTIVITY

"Thanks to the strategic vision, we make decisions based on where we want to be in 10 years and thus we apply energy efficiency in all our processes. In fact, even by renewing industrial machinery and despite the increase in health activity, in the last five years it has been possible to consume 60 percent less fuel, and electricity consumption has decreased by approximately 20 percent, which has left "6.000.000 euros in savings in the last 10 years." (Luis Talavera, interview year 2020)

"However, there is still room for greater energy efficiency, and for increases in productivity at various levels, being clear that especially in the case of a Hospital, the technique is not a goal itself but a means to achieve broader goals of service to citizens, who are the ones who, through their trust, ultimately maintain the existence and capacity of their public health system." (Luis Talavera, Director of the Engineering Department of HUGCDN)