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ADDRESS BY HER MAJESTY THE QUEEN AT THE OPENING CEREMONY OF THE ALZHEIMER CENTRE

Madrid, 8th March, 2007





I am very moved to address you today at the moment when we complete a long dreamed-of project. This simple inauguration ceremony means to me, to my Foundation and to all those who have helped us with this achievement, a lot more than a mere act of protocol.

With it we conclude a long period of team work, when the various Administrations, Central, Autonomous and Local, have made their best efforts to bring our project to a happy ending. So I want to thank most sincerely the Ministries of Work and Social Affairs, and Health and Consumer Affairs for their financial contribution; the Madrid Autonomous Government for taking charge of the equipment and future management of the Centre; and the Madrid City Council for allotting us the building site.

I am also grateful for the invaluable help lent by the civil society, represented by so many businesses, organizations and people who, working closely with official instances, have provided funds, advice or their own labour, in an altruistic and generous way.

This has been in many ways an exemplary piece of work. Not only because of its integrating character, which has allowed us to gather in one Centre all the needs required by Alzheimer patients; not even for being an innovative, avant-garde project. What makes this work a model project is the creative spirit which has inspired it from the beginning, and the deep belief held by all its contributors that we were providing a social service which would have been impossible to achieve by isolated actions.

In short, the main value of this work lies in that all participants have been able, individually and jointly, to overcome one of the deep-ingrained evils of our time: to win over our own indifference, joining wills and efforts for the sake of a deeply social and solidary aim.

Madam Minister of Health and Consumer Affairs, Madam President of the Madrid Autonomous Government: I am most pleased to hand over to you a Centre intended for the research and care of Alzheimer's Disease, unique of its kind.

A building especially designed to give the best possible service to its users.

It contains the dream and the spirit of all those who have worked with tenacity, effort and great enthusiasm to provide our dear Alzheimer patients with an open vital space, bright and familiar, where we hope they may remember again, in the company of their beloved ones, the old dreams of their childhood, youth and maturity.

This is my dearest wish.

Many thanks to you all for your help and for your presence here today.



Opening ceremony of The Alzheimer Centre of the Queen Sofia Foundation. Madrid, 8th March, 2007



HE Alzheimer Project has been a milestone in the 30 years of the Foundation's life, since it was created in 1977. This book is mainly intended to present and explain the Alzheimer Project from its start, including its planning, design and execution, as well as to express our deepest gratitude to all persons, institutions and businesses who have participated because, without their invaluable support, we could not have opened the "Alzheimer Centre of the Queen Sofia Foundation".

The book has four parts. The first describes the work done by the Queen Sofia Foundation to design and plan the Project, and underlines the most significant achievements reached during its execution, until its completion with the inauguration of the Centre by Their Majesties the King and Queen of Spain. The second part contains the Project's explanation from the architectural and building point of view, where the most representative areas of the Centre are described as well as the techniques and materials used, both their quantity and their quality.

Introduction

The third part of the book is about research, an essential part of the Alzheimer Project and its future.

Last but not least we have wanted to include the point of view of the patients' families and their valuable advice which has proved so useful for the Project's development.

To add to the text in the form of annexes, we have listed the most relevant financial data, the actions carried out to finance the Project, advisors, donors and contributor companies.



QUEEN SOFIA FOUNDATION

THE ORIGIN OF THE ALZHEIMER PROJECT.

HE Queen Sofia Foundation's Alzheimer Project was born out of the concern felt by H.M. Queen Sofia over elderly people affected by various types of

dementia, particularly the Alzheimer patients because, apart from the sick person's suffering, few illnesses are so emotionally unbalancing to the relatives of those affected by it.

When she found out that most of the load caused by this disease was taken on by the families, H.M. the Queen decided that her Foundation would design and carry out a support programme for patients and relatives in which broad sectors of the Administration and the civil society would become involved.

CHRONOLOGY AND MAIN MILESTONES

As a preliminary study, and in order to find out the Project's requirements, H.M. the Queen's Office started its planning in 2001, seeking information from the Spanish Embassies to the main developed countries about the advances made in this field; the type of care required by patients and, above all, the minimum needs regarding infrastructure and sociosanitary attention. The reports we received did not provide many answers to the big questions we asked ourselves about this illness. Barely some information on the admission of patients in old people's centres or residences, which had areas specifically devoted to persons with senile dementia or some sort of cognitive handicap, as well as details about different types of residences and the facilities they provided, some research studies, and little else.

What interested us most were the experimental projects carried out in some countries like France or Belgium. These countries have started pilot projects in small homes which try to reproduce a family atmosphere for demented people in the early stages of their disease. This idea was taken on by the Foundation as a basic planning premise.

Besides we contacted relatives' associations, as well as health and welfare officials of our own public administrations.

After several months of study and information gathering, in 2002 the first meetings were held in Zarzuela Palace chaired by H.M. the Queen, with representatives of the three Administrations: central, autonomous and local, at the highest level. Its aim was to study how the Project should be approached, and to analyze the patients' needs from every point of view: sanitary, social, family, etc.



Planning meeting for the Alzheimer Project of the Queen Sofia Foundation, January 2002



Meeting of the Board of Patrons of the Queen Sofia Foundation – 26th October, 2002



Signature of the Agreement for the allotment of the building site for the Alzheimer Centre. 12th December, 2002

Once these requirements were identified and marked out, the Project's basic characteristics were defined, such as integrating, functional, family-oriented, scientific, modular, balanced and participative. It was decided that the Queen Sofia Foundation would take on the whole management of every action leading to the construction of In June 2002, following the Madrid City Council's offer to allocate a building site to the Project, H.M. the Queen visited several plots in the city of Madrid, finally choosing one in the district of Vallecas.

That same month the architectural project was put out to restricted tender, and was finally awarded to Estudio



Technical meeting of the Alzheimer Project in the Estudio Lamela.

the Alzheimer Centre because, being a private legal entity, its coordination would provide the maximum flexibility during the building process.

This idea, which could at first seem risky, as time went on proved to be the right decision, given the many requirements and unforeseen circumstances that the Project had to face. Lamela de Arquitectos, who designed it free of charge and directed the building works.

Initially only a Residence and a Day Care Centre were planned, but when we realized the need to fight the disease from a multidisciplinary point of view, we decided to add a Research Unit and a Training Centre for sanitary staff, relatives and volunteers.



Presentation of the Alzheimer Project at El Pardo Palace, 17th December, 2002



Executive meeting of the Alzheimer Project at Estudio Lamela , $8^{\rm th}$ April, 2003

When the planning stage was over and the Project's requirements were established, Their Majesties King Juan Carlos and Queen Sofia presented it to the Spanish society at a reception held in El Pardo Palace on 17th December, 2002, to which representatives from every social field were invited.

During 2003 the main work was centred on the basic architectural project, the programme of events and the executive project. A working committee was created with architects, geriatricians, neurologists, relatives' associations, officials from the Madrid Autonomous Government, the Madrid City Council and the Ministries of Heath and Consumer Affairs and Work and Social Affairs, who put forward all sorts of experiences and ideas in order to achieve a pioneer Centre.

In June 2004, once the building licence was approved and after many months of tendering and studying the various offers, the building work was awarded to Rayet Company, who offered to build at cost price, as well as donating a significant sum of money to the Project.

In July that same year work started at the Vallecas site, and H.M. the Queen laid the foundation stone on 4th October, when the Centre's foundations were being put down.



Constituent meeting of the Queen Sofia Foundation's Advisory Board, 27th May, 2003

Amongst the main Agreements signed during the building process, the following are significant:

25th February, 2004: Agreement-Programme signed by the Queen Sofia Foundation, the Ministry of Work and Social Affairs and the Ministry of Health and Consumer Affairs, for the construction of the Alzheimer Centre of the Queen Sofia Foundation.

2nd February, 2005: Cooperation Agreement between the Queen Sofia Foundation and the "Mutua Madrileña" Foundation for Medical Research, for the construction of the Centre and the financing of research programmes.

16th December 2005: Cooperation Agreement between the Madrid

Autonomous Government and the Queen Sofia Foundation for the management and equipment of the Centre by the Department for the Family and Social Affairs.

18th January, 2006: Agreement between the Research Centre for Neurological Diseases Foundation (CIEN Foundation) and the Queen Sofia Foundation for the management of the Alzheimer Project's Reseach Unit by the CIEN Foundation.

24th January, 2006: Addenda to the Cooperation Agreement between the Queen Sofia Foundation and the "Mutua Madrileña" Foundation for Medical Research for the equipment of the Research Unit and the financing of the Centre's automation system.



Her Majesty the Queen with Mr. Félix Abánades, Chairman of the Rayet Group.

31st January, 2007: Agreement between the Queen Sofia Foundation and the Department for the Family and Social Affairs of the Madrid Government, for the transfer of the Alzheimer Centre except the Research Unit, and agreement for the transfer of the Research Unit to the CIEN Foundation. which is fully reproduced at the beginning of this book, underlined the Project's main objective:

"This Centre contains the dream and the spirit of all those who have worked with tenacity, effort and great enthusiasm to provide our dear Alzheimer patients with



Laying of the foundation stone, 4th October, 2004

After 32 months of building and equipment works, Their Majesties the King and Queen officially opened the Alzheimer Centre. That day Her Majesty the Queen, in her address to the guests an open vital space, bright and familiar, where we hope they may remember again, in the company of their beloved ones, the old dreams of their childhood, youth and maturity. This is my dearest wish."



Signature of the Cooperation Agreement with the CIEN Foundation, January 2005



Signature of the Cooperation Agreement with the "Mutua Madrileña" Foundation for Medical Research, February 2005



Signature of the Transfer Agreement of the Alzheimer Centre to the Madrid Government and the Ministry of Health and Consumer Affairs, 31st January, 2007

On June 6th, 2007, after three months of starting up the facilities, as well as staff and patient selection, the first patients began to be admitted to the Centre.

The building of the Centre has fulfilled all the Queen Sofia Foundation's greatest expectations. The end result of the work carried out during these five years, with Her Majesty the Queen and everyone involved in the Project giving it their greatest care and effort, has made worthwhile every difficulty always encountered in the course of such a substantial building enterprise.

But the Alzheimer Project does not end in Vallecas. The Queen Sofia Foundation

has signed Cooperation Agreements with several associations, foundations and local and autonomous governments in order to build Day Care Centres and Residences in various Spanish towns. Specifically, agreements have been signed with associations and local official departments in La Coruña, Madrid and Murcia, and other towns are planning similar Centres. The Foundation will also finance projects in the Centre's Research Unit managed by the CIEN Foundation, because the main hope of the patients' families, and of society as a whole, is that research will finally be able to conquer this terrible disease.

Structure of the Alzheimer Centre of the Queen Sofía Foundation

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Life unit









Day Care Centre

































Architecture and Construction

INTRODUCTION

EALTH has become one of the main concerns in today's society. The population's

progressive aging and the assertion that knowledge/mood-related diseases will become one of the main causes of disability in the future pose a new architectural challenge: to design more human-oriented social and health care centres.

Architecture is not alien to the need to humanise health care buildings and, over the last few years, the new health


architecture has been trying to show a more humane side through hospitals, outpatient centres or residential institutions for the elderly and handicapped people.

This is the starting point of therapeutic architecture, a concept embraced not only by architects but also by all the participants involved in caring for a disease: doctors, researchers, nurses, patients, carers, social workers, relatives, etc. New health architectural works are understood as a blend of art and technique and are able to provide the patient with a feeling of well-being and warmth thanks to their aesthetics, not overlooking, however, fundamental notions such as the functionality that every care centre must provide.

Architecture adapts to disease without ignoring the typical needs of medical teams of a health centre and, in addition, it incorporates soft forms, large spaces, and warm colours, lights, materials and textures along with the essential accompaniment of gardens and green areas which act as a therapeutic addition that comforts the patient. The Alzheimer Centre (Centro Alzheimer) of the Queen Sofia Foundation (Fundación Reina Sofía) accurately reflects disease-adapted architecture. Designed by Estudio Lamela de Arquitectos and built by Rayet,

the Centre shows the new architectural sensitivity which has provided an answer to the challenge posed: to combine clinical, social, family and research interests. The result obtained raises architecture to a therapeutic level.

BACKGROUND

No one can deny that Alzheimer's is a serious social and health care problem in many senses: from the clinical, welfare, and research viewpoint but also from the ethical viewpoint, only from a polyhedral view is it possible to face the disease successfully. And, from this polyhedral view, the Alzheimer Centre of the Queen Sofia Foundation is built. This approach draws together social and health aspects and its aim is to ease the ill-effects that Alzheimer's disease causes patients and their families.

The Centre is based on four basic actions: an Inpatient Residential Institution, an Outpatient Day Care Centre, a Research Unit and a Training Centre for health personnel, families and volunteers.

Aware of the importance of the Project's humanisation, Estudio Lamela has

received, from the very beginning, the advice of all the participants involved in Alzheimer's disease. The architects had the chance to know the concerns and needs of health professionals, care personnel and, of course, families. And they have always taken into account the principle of therapeutic architecture, which emphasises disease-based architectural design.

The constructive solutions provided by the Rayet company for living works –changing as projected due to every type of need that arose during the process– are also worth mentioning.







Overview outside and inside the Training Centre.





Frontage of the photovoltaic arch to generate electric energy.

The design team of Estudio Lamela visited different reference centres and, with the ideas and proposals put forward by advisors, a flexible project –which can be modulated, divided into spaces as needed and exported to other places– was completed.

The final result is the Alzheimer Centre, located on a surface of 12,747 built square metres. It has 138 rooms (120 single and 18 double for married couples upon the request of Family Associations) with a maximum capacity for 156 residents, a Day Care Centre for 40 people, a Research Unit with 1,532 built square metres and a Training Centre. It is characterised by a large number of low-height volumes -as expressly recommended by Her Majesty the Queen– which are adapted to the plot topography, united by a dorsal axis that links the two areas into which it is divided: the private area and the public area. In addition, the project greatly respects the environment thanks to bioclimatic measures introduced.

Orientation adapted to its location, actions against overheating, natural ventilation, water treatment, use of ecological covers and use of thermal and photovoltaic solar panels make the Alzheimer Centre a model in bioclimatic practices.

NEEDS AND CHALLENGES

Despite the challenge posed by the design and construction of a project of this magnitude, for which it was necessary to combine the needs of Alzheimer's patients but also those of their families and carers, always respecting the real protagonist, the patient, a thorough project has been developed, pioneering in its conception and development in Spain, including aspects related to Alzheimer's prevention, training, research and treatment.

The complexity of the project was defined by the need to integrate therapeutic, humanistic, family and scientific needs arising from a disease of the magnitude of Alzheimer's.

The result shows that the Alzheimer Centre is a multidisciplinary project that combines purposes as different as research and patient care, which makes it an unprecedented architectural experience in Spain up to date. The building is an ideal model and is erected upon the fundamental premise that it can be exported to many other places in Spain in the near future, which is the initial purpose of the Queen Sofia Foundation.

A modulated solution was achieved, which can be easily adapted to any type of soil and surface, and, at the same time, can be expanded or reduced as required. The building is thus conceived as a horizontal rectangular grid only altered by the Research building, which is higher to differentiate itself from the health care area.

The design of the project has successfully met the objectives set when being developed: integration – because it studies the problem of Alzheimer's disease globally, and functionality – because its designs and structures materialise spaces easily used and identified by guardians and relatives. Beside careful aesthetics, functionality with easily used architecture is prioritised; such architecture is accessible and visually identifiable by patients and, at the same time, warm and domestic for carers and relatives.

The project is also characterised by recreating a family environment. It reproduces, in every cohabitation unit, a domestic and warm environment with clear identifications of personal and family references.

Lastly, the environmental strategy. For Estudio Lamela, the objectives of sustainable design include, among other aspects, increase in the quantity and quality of ventilation (crossed ventilation and ventilated façades), control over natural light and sun exposure with the integration of thermal or photovoltaic solar systems, thermal accumulation based on green covers, thickness of walls, under-gradient building and long-term reduction in building maintenance costs



Reception desk of the Alzheimer Centre of the Queen Sofia Foundation.

through improvements in equipment and systems and water recycling.

THE WORKS (THE CONSTRUCTION SITE)

The Centre is divided into two clearly differentiated areas: the public area and the private area. The public area includes the Day Care Centre, the Research Unit, the Training Centre as well as common public spaces. It has two parking lots, one of quick access in the main entrance, including pedestrian access, and another one for relatives and the Centre's personnel. Next to the access, there are the lobby with an administration area, common public spaces, the Training Centre, the Day Care Centre, with special care sections, and the Research Unit. This is the only area that is developed in height (4 floors) and is shown as a landmark of the residential institution, dominating

















it visually. This is the place where offices are located and can be expanded in the future. The public and private areas are communicated through a lobby with a large ramp that facilitates accessibility.

The private or residential area includes 9 cohabitation or life units (6 typical and 3 for intensive care). Special attention has been paid to the creation of suitable and pleasant spaces for inpatients and outpatients of the Day Care Centre, carers and relatives, without losing sight of human scale, physical accessibility, flexibility and material durability both for exteriors and interiors.

ARCHITECTURAL FEATURES ASSOCIATED TO ALZHEIMER'S

Traditionally, social and health care hospitals and residential institutions have been characterised by cold, dark and threatening environments, with narrow and endless corridors lightened by neon fluorescent light in many cases to avoid the patient's contact with the external world. The current trend of therapeutic architecture drifts apart from these environments and definitely emphasises natural light, which is warmer and becomes one of the fundamental aspects since





it transforms different spaces into environments that better suit the Centre's requirements.

The Alzheimer Centre is a building with very simple architectural concepts, white-coloured and rich in vegetation, with very large windows (150x150) to stress the value of natural light, which promotes the interior-exterior visual relationship. Light is also the leading feature in gardens, adapted to the zone, with few green areas, with trees and benches to rest. The objective is to simulate the traditional squares of towns. The garden becomes the centre of each unit and is perfectly differentiated so that patients can find their way. Finally, there is a recreational area for children who visit patients.

Colour has also been used for therapeutic purposes in order to facilitate orientation, take advantage of light and create warmer environments. There are murals on the walls in transit areas, all of them chosen by Her Majesty the Queen, with air, stone or wood motifs trying to brighten up paths. For example, each unit has a different colour, distinguishable, and also a unique landscape, different from the others. This will favour orientation and identification of each of the modules by its residents.

Great importance has also been placed on the eradication of architectural barriers still often present in many hospital centres. People suffering from Alzheimer's usually have motor problems; the building has then done without any architectural barrier and has good accessibility for handicapped people.

Applying the concept of therapeutic architecture, the project has very wide corridors, with handrails, which become a kind of highway for people since they communicate different rooms of the Centre. Hence they have a double function: communicative - because they interconnect the Day Care Centre, the residential section, the therapy areas and the Research Unit, and therapeutic because they allow patients to circulate throughout the Centre simply and safely. And, lastly, the therapeutic function of gardening and landscaping has not been overlooked. Throughout the different rooms, the building incorporates gardens within patios and an outdoor area for garden therapy and horticulture.

Isolated within patios, gardens are adapted to the two types of life units and to the selection of vegetal species, most of them indigenous to the area and donated by nurseries. There are two types of gardens in the patios surrounding life units. One is characterised by an entry and an L-shaped paved area that surrounds the two sides of the garden. In addition, there is an area with benches encircled by crushed gravel within the garden. Observing the principles of



disease-applied architecture, the project has provided each unit with a specific geometric design and special arboreous, shrub and herbaceous species to help Alzheimer's patients identify their units. This is the reason why each garden has a different name: avant-garde, forest, Mediterranean, geometric, classical and tropical. This process triggers the patient's cognitive function.

The other type of garden has two entrances and a paved area to each side due to the smaller size of the patio. In this case, resulting from the functionality of the Centre, the size is smaller because people living in those areas have a more severe motor disability. In this case, the names of gardens are bamboo, field and mountain.

Another important peculiarity the Centre has is the therapeutic garden. Among the activities proposed by the Centre, horticulture and garden therapy hold a special place. These activities, in addition, are shared by workers, relatives and companions. Patios are thus not only places to rest and gather but also places that play a therapeutic role since they become the work field of garden therapy.

Growing flowers is a good way to recover motor abilities little by little and, at the same time, colours and odours stimulate the patient's senses. For this reason, there are tables that can be quickly assembled











under which there are small storage spaces for tools used in gardening.

External areas are used to locate elevated sites that allow transforming vegetable and garden produce cultivation on the ground. Apart from being comfortable, they allow applying intensive cultivation methods to boost and take full advantage of natural resources: the ground is not stepped on, the soil is kept constantly humid through a drip irrigation system, etc.

And, from that polyhedral view on the care of the Alzheimer's patient, the Centre does not overlook relatives and





friends. For them, there is a recreation area which they share with patients, including a section for child games and a square with playground activities for people of all ages.

THE STRUCTURE

In order for the set to be flexible, the development is horizontal, modular and flexible based on the orientations provided by the Queen Sofia Foundation in the schedule of conditions of the restricted tender. The three basic materials chosen for the project are zinc, glass and prefabricated concrete with small wooden supports for decorative purposes. The prefabricated concrete used is compact and plates provide uniformity and aesthetics, but, at the same time, they offer intimacy against the exterior and safety. The building has one and two floors, with no basement excavations, except for the area under the Day Care Centre and the Research Unit, where the soil was excavated, reaching the level foreseen in architecture.

The largest part of the project has been developed in such a way so as to achieve a uniform global image; thus, the typology is repeated in most volumes making up the set and two types of façades are clearly differentiated: the exterior façade, where prefabricated concrete prevails, and the interior façades towards accessible patios into which public galleries come out, where glass has been used, framed by prefabricated









concrete with characteristics similar to that of the exterior façade.

The main entrance to the building of the Centre stands out. It has a double line of doors to avoid energy losses as far as possible. As for the research building, it is the most elevated set and, therefore, it has an important representative value. Hence, a special façade has been developed which integrates photovoltaic glass plates in the orientations to the south-east and south-west, and single glass plates in the orientation to the north-west. The façade is made up of a zinc coating and a layer of anodised aluminium shaping a U around the prismatic volume, which supports properly oriented glass plates. These, in the south and west areas, include elements of photovoltaic capture inside whereas north-oriented plates will include serigraphy simulating photovoltaic cells.

BIOCLIMATIC ARCHITECTURE

An essential element of the Alzheimer Centre project has been the respect for the environment. Estudio Lamela has been including the bioclimatic









Building works at the Alzheimer Centre, February 2005.





architectural concept in all of its projects for years now. Its purpose is to reach a high level of thermal comfort by adapting the design, geometry, orientation and construction of the building to the climatic conditions of the environment. This is environmentadapted architecture, sensitive to its impact on nature, trying to minimise energy consumption and, along with it, environmental contamination through the reduction in carbon dioxide emissions. A building projected and constructed with bioclimatic criteria can be energetically self-sufficient and achieve an energy saving of up to 60%.

FROM THE IDEA TO THE WORKS: THE RESULT

The Alzheimer Centre has been made possible thanks to the selfless involvement of a great team of professionals and companies that, since 2002, have not stopped helping in the construction of a Centre that could become a paradigm in health care architecture in Spain. All that supervised and managed by the Queen Sofia Foundation, without which, the construction of an architectural set that prioritises the patient would not have been possible. The quality of the construction by Rayet and its control by the company Inteinco are likewise important.

CONSTRUCTION OF THE ALZHEIMER CENTRE OF THE QUEEN SOFIA FOUNDATION

The phase prior to drawing up the project, which included the collection of data and experiences, was long and meticulous, achieving a programme of needs that already put forward many unprecedented solutions in the construction of a building with the characteristics of the Alzheimer Centre.

Due to the ambition of all the parties involved to achieve excellence and the fact that this construction had many pioneering aspects, the process was not completely closed and, therefore, many substantial changes were introduced while the works were being executed. This would not have been possible without the strong determination of the construction company Rayet SA, always willing to meet the objectives of quality, deadline and price –inseparable from any effective management.

To build the Alzheimer Centre, it was necessary to apply a wide range of cutting-edge technologies, whose variety and number far outweigh those of any traditional social and health care building. Double-glass curtain walls and hole opening in enclosures of one and two floors; thicker blind enclosures of lighter structural construction; incorporation of parallel façade made up of plates with solar-capture panels





to generate power through photovoltaic arcs; comprehensive offset lighting project that has been awarded the "Green Light" emblem by the European Commission; energy certification by the Institute of Energy Diversification and Saving (Instituto de Diversificación y Ahorro Energético), this being an energysaving building – pursuant to the recently approved technical building code – which has received the highest rating up to date in Spain; installation of systems to save consumption and service water and to recover surface and waste water separately; prefabricated reinforced concrete and zinc/wood-coated façades; incorporation of materials of acoustic absorption in outpatient areas and areas of common transit; hygienic-sanitary materials in internal coatings; etc. are only a brief sketch of some of the solutions adopted thanks to the coordination between Estudio Lamela and Rayet, which have carried out a unique project and, therefore, unrepeatable as a whole.

Lastly, a highly important piece of information is worth mentioning: the works have been developed and completed with no occupational accident since all the issues related to occupational safety and health have been specially addressed, being priority objectives in the development of the works.









ALZHEIMER'S DISEASE

LZHEIMER'S disease (AD) is named after Dr. Aloysius "Alois" Alzheimer, the German physician who first described it in 1906. At present, AD is the most frequent dementing pathological process, causing around 60% of all dementias.

A century after its identification, it continues to be a disease of unknown origin, with the exception of a small percentage of cases of genetic origin. The physiopathogenesis of AD is partially known, with an extensive body of doctrine on diverse aspects, ranging from subtle changes at a molecular level and in cell function to the deposit of anomalous proteins in the brain, neuron death and alteration of mental state. As yet there is no tried and tested therapeutic or preventive method that forestalls the disease or delays its presentation. AD evolves progressively and its duration is measured in years. There are some symptomatic treatments, with relatively scant effectiveness.

The impact of AD is enormous. In the case of the individual, it causes dissolution of memories and knowledge, drastically modifies personality and emotions, alters habitual behaviour and induces progressive disability. In the latter phases of AD, patients come to depend totally on others in order to

Lastly, AD poses a challenge to society and the welfare state, due to the health and social resources required to attend to such patients, the high cost entailed and the progressive rise in the number of patients, in absolute and in relative terms, resulting from the ageing of the population.



Profesor Alois Alzheimer

continue performing the most basic activities of daily living. Within the patient's immediate circle, relatives and friends suffer the emotional impact of witnessing a loved one's physical and mental health progressively decline and deteriorate. Based on a series of epidemiological studies, the number of AD-sufferers in Spain can be estimated at around 350,000 to 400,000, with the possibility of this figure increasing by 75% (up to as many as 675,000 patients) over the next 25 years if current trends in the demographic

composition of Spanish society and available treatments are maintained.

AD is thus a genuine public health problem and will constitute a challenge of huge proportions for society if no effective measures are found to prevent, delay or neutralise its manifestations. To achieve this goal, a major research effort is called for to enable in-depth knowledge to be gained about the primary causes underlying the disease, the preventive measures needed to prevent it, and the therapeutic measures required to treat it.

ALZHEIMER'S DISEASE RESEARCH Unit from a scientific Stance. Development

The task of operating and overseeing the Alzheimer's Disease Research Unit (ADRU) (Unidad de Investigación del Proyecto Alzheimer) falls to the Carlos



Fundación Centr Enfermedades

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III Institute of Health ("Carlos III Institute") (Instituto de Salud Carlos III) through the agency of the CIEN Foundation Neurological Disease Research Centre (Fundación Centro de Investigación en Enfermedades Neurológicas).

In line with a proposal put forward by the Director of the Carlos III Institute, on 10 February 2003 the Minister of Health and Consumer Affairs gave the order for the staff of the Carlos III Institute to act as advisers and co-ordinators with respect to all architectural and operational aspects of the ADRU project.

On 18 February 2003, the first meeting of experts was held at the Estudio Lamela de Arquitectos, and included representatives of all three Administrations (Local, Regional and Central), Alzheimer's associations, architects, etc. The National Centre for Epidemiology then hosted the first Meeting of ADRU Scientific Advisers on 24 February 2003. Bearing in mind the Unit's fundamental goal (research into AD and related disorders) and the space available, the principal ideas proposed as regards the Unit's facilities, equipment and activities, were that there should be:

• a neuroimaging department, equipped with a magnetic resonance unit for advanced research purposes;

• a neuropathology department for diagnosis and preservation of brains which, along with other duly classified biological specimens, would then constitute a biobank placed at the service of research;

• a laboratory department, capable of processing biological specimens for eventual preservation and for undertaking research activity in situ; and,

• a multidisciplinary support (neurology, neuropsychology, psychiatry, geriatrics, occupational therapy) and healthcare sociology unit, the basic function of which would be systematic collection of data and research in the field of applied epidemiology.

ALZHEIMER'S DISEASE RESEARCH PROJECT ACTIVITIES AND FUNCTIONS

To establish the ADRU's activity and functions, three aspects were considered, namely:

• Conceptual framework – The underlying goal of the Queen Sofia Foundation Alzheimer's Disease Research Project was defined as a "socio-healthcare approach that seeks to address the consequences of Alzheimer's disease" on both the individual and society.

• Physical location – The ADRU adjoins a healthcare facility.

• Operational structure – The ADRU comes under the Carlos III Institute







and is managed and operated by the CIEN Foundation Neurological Disease Research Centre.

The Unit's functions were defined as follows:

• promoting, implementing and following up in-house research projects into Alzheimer's disease and related diseases;

• establishing the ADRU as a reference unit for research into Alzheimer's disease and related diseases;

• generating hypotheses and identifying new areas of interest and areas lacking information, so that these can be targeted for appropriate action;

• furnishing knowledge to the interface with other processes and areas of

knowledge in neurodegenerative diseases and neurosciences;

• promoting research by training researchers, disseminating results and spreading knowledge;

• co-ordinating with other units and centres having similar goals, in Spain and abroad, in order to join forces and enhance the effectiveness of advances in the area of interest; and, setting-up co-operation agreements with other institutions seeking to fight against Alzheimer's disease and other dementing diseases, and to conduct research into neurosciences or like areas.

On 8 April 2003, Her Majesty the Queen presided over an Alzheimer's Disease Research Project follow-up meeting, at which she was briefed in detail about the proposal drawn up for the ADRU.



On 16 June 2003, following a further meeting with the scientific advisers, the final organisational chart and the basic organisation for notification and management of research projects were proposed to the Directorate of the CIII Institute, and the first facilitymaintenance budgets were announced. From this point onwards, the blueprint of the ADRU's operational structure and organisation was firmly established.

ADRU ORGANISATIONAL CHART

The Directorate of the Carlos III Institute decided that the ADRU would "act as a national focal point for research into Alzheimer's Disease under the governing principles of co-ordination, integration, universality and multidisciplinary action".

As an associated unit, the ADRU forms part of the Consortium for Biomedical Research on Neurodegenerative Diseases (Centro de Investigación Biomédica en Red de Enfermedades Neurodegenerativas – CIBERNED), one of the collaborative research consortia promoted by the Ministry of Health and Consumer Affairs – Carlos III Institute of Health.

Both the ADRU and CIBERNED officially commenced activities in 2007. The ADRU's role in this development is perceived as being that of a catalysing, integrating and



participatory element in the generation and conduct of projects based on new hypotheses as well as collaborative projects, thereby enabling co-ordinated and translational research into Alzheimer's disease and other dementias.

BASIC RESEARCH PLATFORMS

Having regard to the functions that should be performed by the ADRU, as well as the Unit's situation, structure and resources, three major areas of activity have been defined. The first entails the creation of cross-sectional resources (e.g., systematic collection of biological material and data), which are then to be made available for any research projects that require them. The second area comprises specific research projects to be undertaken in the Unit itself. The final area consists of research and training activities conducted in collaboration with other bodies, units or centres.

The cross-sectional platforms are as follows:

- Clinical and socio-health database.
- Neuroimaging.
- Neuropathology.
- Molecular and cellular biology.
- Neuroepidemiology.
- Socio-healthcare research.
- Scientific library.





RESEARCH PROGRAMMES

Research is the essential activity that justifies the ADRU's creation and development. As it adjoins facilities which house a notable number of patients at different stages of the disease, the ADRU possesses resources and facilities for the development of research projects in situ and a great potential for interaction with other centres, hospitals, universities, institutes, etc.

From this standpoint, the following operational principles have been drawn up:

• The principal research programme is to focus on AD and related diseases, mainly of a degenerative origin.

• This programme must envisage priorities and activities in the short, medium and long terms, with specific periods being stipulated for each of these categories. Initially, consideration will be given to 2, 3 and 5-year projects, respectively.

• Research programme priorities are to be flexible, always open to new avenues of knowledge and innovation.

• Programmes will be implemented for 5 year periods, after which they will be reviewed to decide whether they are to be continued or amended.

• Research programme priorities will be set by the ADRU Scientific Committee.

The Scientific Committee has designated the following priority areas until 2010:

- Early diagnosis of AD-MRI, biomarkers.
- Molecular and cellular biology in AD –
 β-amyloid peptides, tau proteins.
- Ageing and AD risk factors.
- Translational research on AD.

• Allocation of resources and quality of care among AD patients.



Announcements of Projects

Two types of calls for research projects will be made:

• Internal: understood to mean announcements in respect of specific ADRU proposals (priority areas identified by the Scientific Committee), funded by third – party resources allocated to the Unit for this purpose, with researchers competing freely to be eligible for same.

• External: understood to mean "open" announcements, calling for proposals for projects to be undertaken in collaboration with the ADRU (in the form of joint projects), using applicants' own funding (independent of the Unit), in those cases where there is a need for such studies.

Announcements are to be public and applicants are to be selected by means of a competitive procedure, with the appropriate circumstances for such actions being stipulated by the ADRU's governing bodies. Furthermore, the ADRU will be entitled to collaborate on external projects to be undertaken at other institutions (e.g., by furnishing specific material or participating in subprojects), through a policy of agreements.

Ethics committee

As the ADRU global research programme is based on human studies, the existence of a Research Ethics Committee (REC) is required. Of the functions listed in its Rules & Regulations, special mention should be made of the first four, namely:

• Evaluating the qualifications of the principal researcher and research team in respect of any study submitted.

• Weighing up the methodological, ethical and legal aspects of the projected research.

• Assessing the balance of expected risks and benefits stemming from the respective studies.

• Monitoring compliance with procedures that enable the source of specimens of human origin to be ensured, without prejudice to the provisions of the Data Protection Act (Ley Orgánica de Protección de Datos). Guarantees are to be in place to ensure that any identifying data remain confidential and that all files with personal data or identifying data are covered by appropriate safety measures.

OTHER LINES OF ACTION

• Collaboration agreements with other institutions, units and centres having similar scientific goals or underlying purposes. In this regard, agreements have concluded between the ADRU and the Department for the Family and Social Affairs of the Madrid Government (Comunidad Autónoma de Madrid, Consejería de Familia y Asuntos Sociales) to co-ordinate healthcare tasks with those of research within the walls of



IV Symposium on Advances in Alzheimer's Disease, 21st September, 2007



the complex, and for collaboration in healthcare, research and training.

• In addition, research and training agreements have been or are about to be entered into with the Mount Sinai School of Medicine (New York, United States), Matía Foundation (San Sebastián), Azienda Ospedaliera Cannizaro (Catania, Italy), Alzheimer Foundation (Murcia), Alcorcón Hospital Foundation (Madrid), Scientific Research Council (Consejo Superior de Investigaciones Científicas – CSIC), Molecular Biology Centre – Autonomous University of Madrid, Ruber International Hospital (Madrid) and Alzheimer's Association AFAL (Asociación de Familiares de Enfermos de Alzheimer – AFAL).

• Fellowships for young researchers, to complete their training and initiate their experience in a specific field associated with AD or related diseases. The first of these fellowships was granted in September 2006 to Dr. Carmen Díaz Ruiz, who in this same year began her activity at Mount Sinai School of Medicine under the supervision of Prof. G. Pasinetti (Professor of Neuroscience and Professor of Geriatrics and Adult Development; Director, Basic and Biomedical Research & Training Programme).

• International symposium on "Advances in Alzheimer's disease", aimed at updating first-hand knowledge and establishing a framework for scientific relations between domestic and international experts. The first of these annual symposia was held on 21 September 2004. The three editions held to date have been attended by Her Majesty the Queen and the Minister of Health and Consumer Affairs, as well as other authorities and personalities.

• Creation of a webpage with ADRUbased content matter, hosted by the CIEN Foundation portal.

Initiatives under development or in preparation since the ADRU became operational:

- Creation of a Queen Sofia Foundation Alzheimer's Disease Research Prize for young researchers, as a means of stimulating future scientists' dedication to this topic.
- Organisation of regular or extraordinary scientific meetings or seminars, such as the: "From Bench to Bedside" Seminar (translational), intended for professionals; and a "Meet the Researchers" Day, meant for the general public, etc.
- Publications targeted at the general public and professionals.
- AD information and help-telephone (volunteers, members of mutual help associations).
- Annual Open House Day.
- Bank of volunteers.



INTRODUCTION

T the end of 2001 the main offices of "AFAL amigo" hosted a special visit from a person, sent on behalf of Her Majesty the Queen, to learn more about our work and the needs of the families of Alzheimer victims. That is how those families became aware of Her Majesty's interest and that of the Foundation that she chairs since the earliest stages of the Alzheimer Project.

Some time later, we were able to confirm that the information we had received during that visit was to materialize into something much more ambitious, and which is today a reality: the Alzheimer Project of the Queen Sofia Foundation.

Through this document we will try to reflect what the collaboration with this great Project has meant for the families of people afflicted with Alzheimer's disease.

When Alzheimer's strikes a family, the diagnostic causes havoc, just as the real bomb that it is, totally devastating the affected individual's prior life. It is then that we inevitably insist on knowing about the disease and its origins. We the relatives, in our eagerness to know, have traced Alzheimer's to its roots in 1906, and have discovered that, in a meeting of German psychiatrists, Alois Alzheimer described the case of a 51-year-old woman who had a serious loss of memory, was disoriented, suffered from language alterations and paranoid ideas, and died four years later in the depths of a severe case of dementia. Her autopsy revealed brain lesions consistent with cerebral atrophy and the presence of what later became known as senile bodies.

sociations of Relatives of

cheimer's patients

A passionate story thus began 100 years ago, the description and concern for a pathology that has spawned the greatest research on how the human nervous system functions. It was natural that Alzheimer's disease was named after its founder.

At present, the diagnostic of dementia cases is ten times greater than those detected at the beginning of the century. Various studies throughout the world have shown that the growth of the disease is parallel to the greying of its populations. In the near future, an increased life-span and consequent growth of those aged 65 and over will bring about significant social and health problems. It is estimated that one of every four families today coexists with a patient suffering from dementia. People affected with Alzheimer's are completely helpless to seek help on their own, and rely on the family, social or health means found in their most immediate social milieu.

The admission of patients to adequate institutions is almost always the last solution that a family resorts to; unfortunately, when that day arrives, it is not always easy to find the most appropriate centres. From the beginning, the Alzheimer Project wanted to develop standards of care and attention which could be adopted by all centres and used as guidelines.





THE ASSOCIATIONS OF RELATIVES OF ALZHEIMER'S PATIENTS AND THE ALZHEIMER PROJECT

In the case of Alzheimer's disease, various patients' associations come together as Associations of Relatives of Alzheimer's Patients. Unfortunately, the patients themselves do not have the capacity of associating and representing themselves, so their voice is that of their relatives. That is a common characteristic of our associative movement: Relatives make up the boards of directors. All of us are naturally moving toward a much-needed professionalizing, but without losing sight of our origins, something that is necessary to have first-hand knowledge of all aspects surrounding this disease. Right now there are more than 300 associations in Spain which constitute a useful and needed resource when Alzheimer's strikes a family. The first advice that we repeatedly ask health professionals to provide when giving a diagnosis is to ask the families to go to the nearest AFA (generic term by which relatives' associations are known) because they are without a doubt a tremendously useful resource. Please go to www.ceafa.org and www.afal.es for more information.

In this case, the relatives are represented by the associations, CEAFA and AFALcontigo (formerly Association of Relatives of Alzheimer's Patients in Madrid). During that first contact, the Queen Sofia Foundation shared with us



Audience to members of the Board of Directors of the Confederation of Associations of Patients of Alzheimer's and other Dementias (CEAFA), 19 September, 2003.



Overview of a training room and the cafeteria.





what was then little more than an idea. That first meeting was followed by many others, organized in work teams and commissions. We attended practically each and every one of the meetings, contributing our expertise and knowhow of the disease.

In September 2003, Her Majesty the Queen granted an audience in the Zarzuela Palace, which was attended by representatives of the Federations of Associations of Relatives of Alzheimer Patients from all the autonomic communities. It turned out to be very worthwhile and moving to be able to experience first-hand Her Majesty's interest in supporting our cause. Throughout the gestation of the Alzheimer Project, there have been many public events, presentations, concerts and activities in which we have always participated, sometimes by ourselves and others contributing with whatever we could.

OUR CHIEF CONTRIBUTIONS TO THE ALZHEIMER PROJECT: TRAINING AND AUTOMATION

TRAINING

The Alzheimer Project was initially conceived as a Centre where direct assistance to the patients could be given in the In-patient and Out-patient Centres. Later on the Research and Training Units were added. Training is the key which enables us to improve the quality of life for the patients and their families.

Given the training expertise which AFALcontigo has developed since 2002 with the advent of its first school –already home to so many students– the bulk of our assessment centred round the design of that unit's structure. From the very beginning, we thought it was fundamental for the Queen Sofia Foundation to address the three key groups in the interaction with patients:

• Professionals. Directly in charge of the care given to the Alzheimer patient.

• Relatives: Responsible for the care of the Alzheimer patient and an essential pillar to improving the patients' quality of life.

• Volunteers: Another of the fundamental pillars in providing support and muchneeded rest to the relatives and the Alzheimer's patients themselves.

In addition, we decided to suggest the inclusion of:

• School for Senior Adults: As the groundwork for the prevention of physical and psychological problems, we propose an area for the cultural training of the senior adults, to be divided in Science and Arts, and whose primary objective is the acquisition of knowledge and the



integration of relatives of the Alzheimer patients in developing leisure activities, which we now appreciate for their fine therapeutic value. The training in this Centre cannot be understood as being the sole domain of the formal caregivers, but also of the informal ones, as well as a place for the continuing education and training of the workers of the Centre. The design proposed for the Training Centre was as follows:

TRAINING AREAS:

Professionals

The area intended for the training of professionals in charge of the care given to Alzheimer patient must be divided into different sections, depending on the qualifications of the professionals to be trained.

• Specialized training. Addressed to staff with higher education degrees with different profiles:

- Managers
- Psychologists and social workers
- Doctors





- Registered Nurses
- Therapists and Physical Therapists
- Bioethics
- Training of mid-level managers
 - Service managers
 - Supervisors
 - Associates
 - Administration
- Training of support personnel
 - Geriatric aides
 - Aides
 - Cleaning and kitchen staff
 - Orderlies
 - Others
- Other types of training:
 - Workshops and specific courses
 - Art therapy
- Relatives

The training address to the family must be focused on the learning of specific techniques in the handling of behavioural changes, as well as the knowledge of the repercussions which Alzheimer's can have on the patient and relatives. • Basic Courses. Courses lasting from 20

to 30 hours designed to review all key aspects of Alzheimer's disease:

- Evolution and diagnostic
- Psychological repercussions
- Stimulation
- Adapting to the environment
- Social and legal resources
- Workshops. Specific seminars on disease-related problems:
 - Communications
 - Relaxation
 - Moving and transferring
 - Pain and mourning
- Voluntary Service

Volunteer work is fundamental to the assistance and improvement of the quality of life of the Alzheimer patient and his family. That is why the Training Centre should promote training for this group and its specialization in the various tasks they will be required to perform. Volunteers are the "generous hearts" that are imbued with transmitting the philosophy of the



entity they belong to and are so willing to work for. To be able to count on a good team of volunteers is a great luxury, but to achieve that they must be well-trained.

School for senior adults

The School for Senior Adults will promote the intellectual preservation of the elderly through various courses and lectures to broaden their knowledge of different matters of interest.

- Science subjects: Courses and lectures regarding subjects related to mathematics, the environment and health.
- Arts: Courses and lectures regarding subjects related to history, art or literature.

OBJECTIVES OF THE TRAINING CENTRE

• Train in a theoretical and practical way all those professionals involved with Alzheimer's disease: doctors, psychologists, occupational and physical therapists, lawyers, geriatric aides, social and cultural events organizers, etc.









• Train relatives who are responsible for the care of the patients.

• Train volunteers and provide them with specialized knowledge.

• Improve the quality of life of the Alzheimer patient through the training given to professionals, relatives and volunteers.

• Train professionals from different disciplines so as to achieve an interdisciplinary treatment in the attention given to Alzheimer patients.

• Gather the results of the application of knowledge from professionals as well as relatives.

AUTOMATION

The start-up of Alzheimer Project practically coincided with the granting of a subsidy by the Ministry of Work and Social Affairs to AFALcontigo for the design and authorization of an automated switchboard for Alzheimer patients.

The company responsible for its development was T4L (Technology for Living) and we felt that once developed, it was only right and proper for the Alzheimer Centre of the Queen Sofia Foundation to house the first such centre. Our expressed wishes culminated in a signed agreement. The families, aware that complaints from residential centres arise for the most part from breakdowns in communications between the various involved parties, looked for a solution in the new technologies. Thus we began working jointly with the people in charge of developing the project so as to better define, develop, implement and maintain a project of integrated automation (environmental intelligence) for the Alzheimer Centre.

The whole project consisted of two phases: The Authorization of a Centralised System for the Control of Automated Technologies and the Implementation of a Pilot Project, as well as a second stage with regards to the Implementation Project in the Alzheimer Centre.

Technology has advanced considerably in the last few years: from the microelectronics found in our worksites, cars or telephones, all the way to the Internet, new technologies have advanced at a greater pace than any other sector in our present-day society.

Intelligent systems for the detection of trespassers, telephone-controlled thermostats, intelligent home appliances, etc. All these advances have been with us in our homes for some time now, so why not install them in a project such as this? We have always conceived Alzheimer Project as a residence where all of us would like to live if we should ever be afflicted with this terrible disease. Automation seeks the incorporation of user-friendly technology to the equipment in our homes and buildings, with the goal of making our environment safer, more comfortable and efficient.

Let us look at some examples of the direct benefits that can be derived:

- Energy savings: the regulation of temperature, control of lighting, etc.
- Security: Custody and vigilance against intruders, floods, fire, gas leaks, etc.

• Communications: remote controls and telemetry, access to Internet, internal communications and information technology resources shared within the home. The management of communications prevents the isolation of senior citizens and those with reduced mobility, and also allows for a speedier assistance.

• Comfort: timely programming of heating, light, automatic sprinkler systems, etc.

As we have mentioned, the concept of environmental intelligence (integrated automation) goes well beyond the simple Internet-wired home (sensors and integrated switches integrated in a more or less coherent and coordinated way).

The Project seeks:

• To improve the patient's environment, turning his physical space (room, common areas, etc.) into an intelligent space that will support his care. • To offer a tool all interested centres who want to join in this endeavour, so that they may provide better service, increase their security and open their doors to innovation.

• To implement new technologies so that the relatives will know that innovation is there to serve their loved ones and to increase their quality of everyday life. This knowledge will reassure them and cause many complaints to disappear as they are quite often the result of not receiving adequate information when requested.

There are sensors that detect movement or a fall (which interrupt an infrared beam placed at various levels). The sensors have to communicate with a central computer which in turn warns the particular carer that the situation must be looked into. The carer goes to the room and neutralizes the alarm. It is the patient's environment (his room in this case) that detects and warns of the danger. We will be able to know the exact time of the accident and how much time elapsed until the situation was dealt with. Moreover, all the information is automatically recorded in the patient's record.

SOCIAL ASPECTS AND FIELDWORK

Meetings were scheduled with the interested centres (management and employees) and relatives (AFALcontigo





staff as well as patients' relatives). The meetings with residences (Grupo Care, Residencia Villaverde of the Madrid Autonomous Government, Residencia Casblanca, Centres of the Fundación Matía, among others) were held in private and public centres. The subjects dealt with were as follows:

- Presentation of the project
- Approach to the problem
- Pathological problems
- Joint analysis of the implications of the Centre
- Survey of possible options
- Conclusions

The following job positions were present at the meetings: Centre Director (Residential), Doctor, Psychologist, Staff Manager, Maintenance Chief, Social Worker, Physical Therapist, Nurse, Occupational therapist, Medical aide, Geriatric worker. Their presence was important in order to:

• Understand the reality of the residents from the perspective of the carer and the Centre.

• Understand the reality of the residents and the Centre from the perspective of the family.

• Discover the main problems that affect the quality of life of the residents from the point of view of each job position.

• Value the participants' expectations and experiences with technological

solutions designed to improve the residents' quality of life.

• Link the critical tasks in each item with respect to the residents.

Two kinds of main concerns were identified:

With respect to the residents, problems related to the patients' care and attention (in order of importance):

- Security
- Control of the location
- Control of movement
- Control of falls
- Control of doors and other accesses
- Hygiene
- Hydratation (Health)
- Nutrition (Health)

With respect to Centre staff, repetitive tasks and vigilance-supervision (in order of importance):

- Vigilance of the resident's location
- Supervision of the general state of the residence
- Changes of diapers
- Changes of posture
- Changes of clothes
- Taking measurements (glucose, hydratation and similar)

• Control of medicines and prescriptions

In addition to this work, there was an exhaustive review of job positions to

better identify the benefits, requirements and needs for this type of technologies on a case-by-case basis.

NEEDS ANALYSIS

After the specific needs of the various participants (patients, collectives, families and institutions) were identified, a document was produced to reflect the following concerns:

- State of the applicable technology
- State of the technological market regarding infrastructures
- Minimum automation system
- Desirable automation system

The four items above tried to define the existing systems and its employment in the project. In order to do that, an analysis was made of the systems available in the market as well as those under development, or that could be implemented keeping in mind the alreadymentioned technological advances.

• Document of Authorization for future developments.

• Centralized control system.

• Survey among various groups, institutions and families in order to obtain a fair idea of the present situation and needs.

• Analysis of the best way to publicize the project by designing and creating a web page with the objectives, recommendations and results.

DEVELOP A CENTRAL CONTROL SYSTEM

The installed platform hopes to accomplish the following results:

• Define and implement the functional and technological basis for the improvement of the residence's environment.

• Allow the residence to offer a better service for its patients through the improvement of communications and warning systems that connect the environment with those responsible for the patients (carers among others).

• Implement a system of environmental intelligence that will benefit the Residence, its residents and their relatives.

• Depend on a system that will improve the capturing, storing and management of data so as to offer new lines of research in the future.

• Have a data base of all incidences and problems and be able to show their prompt resolution.

• Initiate the project of environmental intelligence in the Alzheimer Centre of the Queen Sofia Foundation, which could be extended to more applications in other centres.

• Incorporate those systems that monitor the automation of infrastructures (breakdown of consumption, fire alarms, etc.)

With the above we hope to reap the following benefits:



• Increased control of the incidents in the Residence.

• Improved service to relatives, offering not only greater peace of mind as far as care capability for their loved ones, but also a system that will allow them to receive information from the Residence (email).

• Relieve carers of repetitive tasks so that they can devote more time to providing personalized care. • Depend on a WiFi network which in the future will allow for a faster evolution in the implementation of new integrated automation technologies.

We think that one of the project's main achievements has been the creation of a cohesive workgroup trained by the Queen Sofia Foundation, the State Centre for Personal Autonomy and Technological Aids (CEAPAT), an association of patients and their relatives (AFAL), a private-sector company (T4L – Technology for Living) and public universities (ETSIT and ETSII).

The idea was not only to develop a unique project, but also to create a knowledge base and a workgroup that can move forward in this field which deals with the environment of residences for people with disabilities or neurodegenerative diseases.

CONCLUSIONS

For the families, the Alzheimer Project of the Queen Sofia Foundation brings a beacon of hope. The mere fact of having the support of Her Majesty the Queen has been a tremendous contribution to our cause and has noticeably helped to sensitize Spanish society and Public Administrations to this pathology. We are confident that the Queen Sofia Foundation will continue to tutor the work it has so successfully carried out so far, and trust that in the future the Research Unit will achieve great advances in the knowledge of Alzheimer's and its prevention.

A collaborative agreement between the National Association of Alzheimer (AFALcontigo) and the CIEN Foundation, which leads the Research Unit, has been recently signed to provide the needed collaboration in all necessary aspects. Patients and their families play a key role in the contributions that can be made to further the research, and their generosity is paramount to reaching our goals.







ACCOUNTED FINAL COSTS	EUROS
SITE	5.619.558,76
ARCHITECTURAL PROJECT	1.972.476,32
CONSTRUCTION + EQUIPMENT AND	21.368.041,27
AUTOMATION	
RESEARCH UNIT EQUIPMENT	2.393.498,67
RESIDENTIAL UNIT EQUIPMENT	2.268.750,49
OTHER EQUIPMENT	79.830,62
TOTAL	33.702.156,13

	EUROS
ANUAL MANAGEMENT COST OF THE DAY CARE	4.247.723,25
AND RESIDENTIAL AREAS	

	EUROS
ANUAL COST FORECAST FOR THE RESEARCH UNIT	1.200.000,00

INCOME FOR THE ALZHEIMER PROJECT	EUROS
PROVIDED BY THE QUEEN SOFIA FOUNDATION	
Año 2002	59.783,97
Año 2003	183.351,64
Año 2004	95.134,67
Año 2005	91.970,87
Año 2006	360.904,15
Año 2007	52.439,47
TOTAL	843.584,77

Year 2002

AENOR Concert HUBLOT Concert

Year 2003

COFARES Concert

Year 2004

PALACE HOTEL Concert PUENTE ROMANO HOTEL Gala RAYET Concert COFARES Campaign "I forgot to live"

Year 2005

RAYET Concert PUENTE ROMANO HOTEL Concert

Year 2006

VACHERON-CONSTANTIN Concert PROSEGUR FOUNDATION Concert RAYET Concert

Year 2007

ENDESA Concert PUENTE ROMANO HOTEL Gala

Total amount raised: 1-027.404,64 €



Fundraising © Events




Concerts

in Aid of the Alzheimer Project



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116	

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ADDRESS BY HER MAJESTY THE QUEEN AT THE OPENING CEREMONY OF THE ALZHEIMER CENTRE	. 7
INTRODUCTION	13
THE ORIGIN OF THE ALZHEIMER PROJECT.	14
	14
ARCHITECTURE AND CONSTRUCTION	36
Introduction	36
Background	57
Needs and challenges	42
The works (the construction site)	43
Architectural features associated to Alzheimer's	49 5 0
The structure	58
Bioclimatic architecture	50 77
From the idea to the works: The result	63
Construction of the Alzheimer Centre of the Queen Sofia Foundation	64
RESEARCH	
Alzheimer's Disease	69
Alzheimer's Disease Research Unit from a scientific stance. Development 7	71
Alzheimer's Disease Research Project activities and functions	73
ADRU Organisational Chart	78
Basic research platforms	79

Research programmes	1
Announcements of Projects 82	2
Other lines of action	2
Introduction	7
The Associations of Relatives of Alzheimer's patients	7
The Associations of Relatives of Alzheimer's patients and the	
Alzheimer Project	J
Our chief contributions to the Alzheimer Project:	
Training	2
Objectives of the Training Centre	5
Automation	7
Social aspects and fieldwork	8
Needs analysis	2
Develop a Central Control System 102	2
Conclusions 104	4
Relevant financial data on the Alzheimer Project 100	6
FUNDRAISING CONCERTS & EVENTS AID OF THE ALZHEIMER PROJECT 108	8
CONTRIBUTORS TO THE ALZHEIMER PROJECT 11	1
SUPPORT GIVEN TO ASSOCIATIONS OF RELATIVES OF ALZHEIMER	
PATIENTS. DONATIONS OF OFFICE FURNITURE 124	4
PRIZES WON BY THE ALZHEIMER PROJECT 120	5



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