Royal Norwegian Embassy
Managua, Nicaragua
Renovation and extension
Statsbygg acts on behalf of the Norwegian government as project management and advisor on construction and property affairs. Statsbygg is a public enterprise responsible to the Ministry of Modernisation, and has its head office in Oslo and regional offices in Oslo, Porsgrunn, Bergen, Trondheim and Tromsø.

Statsbygg assists or provides the various Ministries and other civil public bodies with the adaptation of premises or new premises. The government's overall objectives take precedence over Statsbygg's own business interests. Statsbygg shall function as a tool for the accomplishment of political goals related to the environment, architecture, aesthetics, innovative systems for users, and health, safety and the environment at work, as determined by the Ministries.

Consultant and project management

The government's requirement for premises can be met by either renting, purchasing or building. Statsbygg offers consultancy to governmental organisations for renting on the private market, or offers rental of Statsbygg's own premises. Where local requirements dictate a new building, Statsbygg acts as consultant to governmental bodies intending to construct the building independently, or as principal building contractor on behalf of the Ministries when the government intends to own the new building.

Property management

In total, Statsbygg manages approximately 2 mill m² both at home and abroad. This property mass consists of central office buildings, colleges, universities, special buildings and national properties throughout Norway, and embassies and residences abroad. Statsbygg's property managers shall ensure that our users have access to functional premises adapted to their needs at all times. Statsbygg also works hard to ensure that the property value is preserved by implementing a high level of maintenance, and to protect the cultural characteristics and architectural value of historical buildings.

Development projects

Statsbygg shall play an active role in the co-ordination of governmental interests related to property development and town planning. Governmental requirements related to such matters shall be made clear in order to lay the grounds for a mutually beneficial interaction with local authorities. This includes planning for new utilisation of governmental properties which are to be vacated. The government has established an environmental policy and Statsbygg shall help fulfil this policy by implementing a comprehensive R&D programme. This R&D programme also includes projects aimed at improving prevailing standards, regulations and rules for the building, construction and property industry.
The Norwegian presence in Managua came about in 1988 in connection with the aid project established between Norway and Nicaragua. The Norwegian foreign service station in Managua was set up as a consulate, run by NORAD (The Norwegian Agency for Development Cooperation), and responsible to the Norwegian embassy, in San José, Costa Rica.

Initially, a private residence was rented and furnished for office purposes. However, it soon became necessary to decide on the purchase of a property. Once it was established that such a move would be profitable, the purchase was formalised in March 1989.

The Norwegian involvement in Nicaragua saw a gradual increase, with larger grants awarded and the establishment of a peace corps. By the mid 90s, approximately 20 people worked for the consulate in the various regions of Nicaragua. With the increase in responsibilities and a larger administrative staff came the requirement for more office space. In 1992, the property was extended with an annex holding four offices adjacent to the original building. Despite this extension, the office layout in parts of the old building was still unsatisfactory, and these areas were renovated in 1995 to improve facilities for support functions etc.

In April 1997, the consulate in Managua was upgraded to embassy, and an ambassador was appointed. At the same time, the embassy in San José was converted to an honorary consulate, responsible to the embassy in Managua. The honorary consulate in Panama was also made responsible to the embassy in Managua at this time.

These two moves made it clear that the Norwegian presence in Nicaragua was to be long-term. The office premises at that time did not fulfil the requirements for a Norwegian embassy regarding safety and the working environment, and the question of renovation was approached. In 1999, plans for a reconstruction project were so far advanced that the actual work was about to start.

However, the plans were put on ice due to a review of Norwegian aid, which included an evaluation of the Norwegian presence in Nicaragua. Once this matter had been determined in 2001, the reconstruction project was reopened. On 1 January 2000, the property was transferred to Statsbygg as a result of the establishment of a rent agreement for foreign properties belonging to the Ministry of Foreign Affairs. The current project which has now been completed is based on the plans compiled in 1999, with certain adaptations.

The residential property purchased in 1989 has now become an attractive office property in a pleasant part of Managua.

Ola Jensen
Royal Norwegian Embassy Managua
The building project was submitted as a request by the foreign service station as early as 1997. This project was postponed due to the uncertainty regarding Norway's continued presence in Nicaragua. However, this matter was concluded by the end of 2001 and the decision was made to resume planning.

The final sketches, compiled in Norway, for the reconstruction/rehabilitation were completed in July 2003. The competitive tendering for the position of local Contract Manager was held in the summer of 2003, and the position appointed in August 2003. Planning of the detailed project was completed in December 2003. The competitive tendering for the general contract was held at the turn of the year 2003/2004, during which two of eight companies invited to compete submitted tenders. Carrion Cruz Construcciones S.A. won the contract. The building work started in February 2004 and was completed in November 2004.
Description of the building

Architecture
The site is approximately 3,000 m², with an office area of approximately 900 m². The embassy is located in the centre of Managua with many other embassies nearby. The north side of the site fronts one of the city's main streets, Benjamín Zéleldón Street. The embassy complex consists of a main building with an annexed pavilion housing four offices. The main building was a private residence before it was converted into an embassy, and extra office space was added by building a pavilion extension in the nineties. The main building was built before the 1972 earthquake in Managua. Even though the main building survived the enormous stresses caused by that disaster, the project has included further preventative measures to isolate the existing walls from the roof structure. An independent structure was designed to support the roof and to withstand the seismic stresses of any future earthquakes.

The project includes the following:
• A new office wing.
• The renovation and alteration of offices, new reception area with security measures and new sanitary facilities. The replacement of all windows and doors.
• Earthquake strengthening measures.
• Establishing parking area and new access.
• New air conditioning (split units).
• New electrical system.
• New emergency power supply.
• Misc. outdoor refurbishments.

The extension has been designed to integrate harmoniously with the original buildings. Elements of the existing buildings that did not fit in with the geometric simplicity of the new building were modified.

Construction
Conceptually, the design is simple. It consists of a load-bearing structure of cold-rolled structural steel; light-weight walls of ferrocement with thermal insulation. This construction technique was chosen in order to provide greater structural safety for the building during an earthquake.

The three parts of the complex have different foundation types. One foundation consists of concrete footings supporting the columns of the new roof structure of the original building, the second has concrete footings that run the length of the walls in the pavilion, and the third a concrete slab under the new wing.

The concrete facades are plastered and painted. The outdoor walkways are made of stamped-engraved concrete, which looks like paving.

The interiors of the building are finished with high quality plaster. The ceiling is made of gypsum supported on an aluminium grid. The windows have metal frames. The doors are of laurel and mahogany, which are native to the country.
Sanitary facilities
Water from the mains is pumped to a water tower, which supplies the embassy directly by gravity feed. All toilet facilities are of high quality porcelain and were supplied by local manufacturers. There is hot water in all bathrooms, supplied by three electric heaters located at different positions.

Ventilation and cooling
The cooling systems for all rooms for permanent occupancy consist of split-units. The new wing has been designed according to the principle of passive solar design in order to reduce the need for cooling and ventilation, thereby lowering energy consumption in the building. The new wing lies on an east-west axis and has wide eaves supplemented by external metal louvres fixed between deep pilasters in front of the windows. The eaves and louvres shade the outer walls and reduce the amount of direct sunlight entering the rooms. However, during winter when the sun is lower on the horizon, the eaves and louvres allow direct sunlight to fall on the walls and into the rooms for heating. The warm air that rises along the external walls is caught under the eaves and fed into the attic and out into the open by means of continuous ventilation louvres along the ridge of the roof. In this way, excessive heating of the air in the attic is avoided. The attic is insulated from the offices below with 200 mm mineral insulation placed on top of the fixed ceiling.

Electrical installations
High voltage installations
The embassy now has a new bank of 150 kVA transformers connected to the commercial power grid. The capacity is about 40% greater than the present demand, leaving room for future expansion.

Low voltage and substations
The electrical wiring from the transformer bank feeds the embassy’s offices with 220V and 100V current. The embassy has a new generator for emergencies when public service is cut. The generator has the capacity to supply all equipment used.

Lighting
All interior lighting for the offices and hallways is essentially low energy consumption fluorescent fixtures installed in the suspended gypsum ceiling.

Telephones
A PBX station has been installed.

Data cabling
The embassy has been provided with a fibre optic system for local data transfer and Internet access from the local server.

Fire alarms
Smoke and heat detectors have been installed in all areas of the embassy, including storerooms and hallways.

Outdoor lighting
The outdoor lighting is photo-sensitive and turns on automatically when ambient light fades. Special emphasis has been placed on sufficient lighting for entrance ways and for the outer walls surrounding the embassy complex.
## Project administration

<table>
<thead>
<tr>
<th>Principal</th>
<th>Royal Norwegian Ministry of Foreign Affairs</th>
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<tbody>
<tr>
<td>Client</td>
<td>Statsbygg</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Mr. Øystein Franing</td>
</tr>
<tr>
<td>Embassy Representatives</td>
<td>Ambassador Idar Johansen, Mr. Ola Jensen</td>
</tr>
<tr>
<td>Architect</td>
<td>Finn Kleiva AS, Mr. Finn Kleiva</td>
</tr>
<tr>
<td>Contractor</td>
<td>Carrion Cruz Construcciones, S.A</td>
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<tr>
<td>Contract Manager</td>
<td>Ingenieros &amp; Arquitectos, Consultores, Mr. Maurilio Reyes, Mr. Marcelino Castro, Ms. Isabel Mairena</td>
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## Project cost

(provisional figures)

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<tr>
<th>Project cost:</th>
<th>approx. 5 mill NOK</th>
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### Floor space

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<th>Area</th>
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<td>Original building, approx.</td>
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<tr>
<td>New building, approx.</td>
<td>175 m²</td>
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<tr>
<td>Total</td>
<td>900 m²</td>
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