

A. D. JILAJIAN AND ASSOCIATES
CONSULTING ENGINEERS

200 MAIN STREET • HACKENSACK, NEW JERSEY 07601 • HUBBARD 9-7477

January 30, 1975

Mr Thomas Bardakian
Chairman
Center Management Committee
Diocese Of The Armenian Church

Dear Tom:

I am enclosing a copy of a report we prepared for your committee.

We surveyed the facilities several times to see if it was possible to install a boiler, a storage tank etc. I met several times with Mr. Arnold Schmidt, he has a very good background in mechanical systems and understands the operation of our systems well and he is well aware of the problems we are having at the Center. You can be quite sure about the dollar savings, we say the Church can realize. I know it sounds good.

This trend of generating your own steam will be soon adopted by most of the real estate firms in New York City. Right now, we have five building plans in our office, all of them are existing New York City apartment buildings which will be divorced from Con Ed steam.

There will be no charge for the attached report. If you or your committee needs further information please let me know.

In the future, if your committee decides to go ahead with the project, you should have a consulting firm design and prepare documents to cover the installation of the boiler plant. We can of course provide this type of service and I hope that you will consider my firm.

As you know I was a member of the original Building Committee during the construction days. Unfortunately I was brought in towards the end of the project and some of the changes which I had suggested were not carried through. I am attaching a copy of a letter dated 1966 which should be of some interest vis-a-vis today's energy situation.

Sincerely yours,

Ara D. Jilajian, PE

FEASIBILITY STUDY
ON
THE REDUCTION OF ENERGY
RELATED OPERATING COSTS

FOR

ARMENIAN DIOCESAN CENTER
630 SECOND AVE. NEW YORK CITY

BY

A. D. Jilajian and Associates
Consulting Engineers
Hackensack, New Jersey

January 1975



I N T R O D U C T I O N

A survey of the Diocesan Cultural Center located at 630 Second Avenue, New York, N.Y. was undertaken in January 1975, in order to evaluate methods by which energy related costs could be reduced.

The building central heating and air conditioning systems are the principal consumers of energy purchased in the form of steam from the Consolidated Edison Company of New York.

The building energy consumption data and costs were obtained from actual 1971 - 1974 billings by Consolidated Edison.

DESCRIPTION OF BUILDING FACILITIES

The building is served by a 3 inch high-pressure steam main which provides steam to the original Gulbenkian Building, the six central heating and air conditioning units, and the convertors which provide forced hot water to the building perimeter radiation. The condensate is discharged into the city sewers.

Air conditioning is obtained from a Carrier Absorption type unit which uses steam as its prime power and provides chilled water, which in turn is pumped to the individual central units, thus providing air conditioning in all areas.

Both steam and electricity are purchased from Consolidated Edison. Basically, steam is used to heat and cool the entire complex and electricity to drive the motors in conjunction with the related equipment.

It can be assumed that 80% of the operating costs of an absorption system is due to the steam consumption and therefore, this is the area which is being investigated in this study.

C O N C L U S I O N S

A preliminary survey and evaluation of the existing facilities indicates engineering options are available for improvements in the present operation which would result in economic and technical benefits.

The potential for significant reductions in operating expenses is possible by converting from purchased steam to self-generating steam capability. Annual savings in energy costs are estimated to be over \$25,000 a year based on a comparison of No.4 fuel oil costs and utility rates for purchased steam to be in effect during 1975.

An economic analysis, based on a preliminary cost estimate for new equipment installation and other related alterations, indicates that the required capital investment can be payed out in approximately three (3) years neglecting interest charges and depreciation.

We have included some graphs in order to facilitate the study of the various variables. In all cases we have taken a conservative approach. For example, the projected steam energy cost for the year 1975 could very well be \$70,000. However we suggest that the 3 year payout period be used by the Center Management Committee.

R E C O M M E N D A T I O N S

order to realize the savings in energy costs of \$25,000 per year, it is proposed that the existing building heating and air conditioning systems be modified as follows:

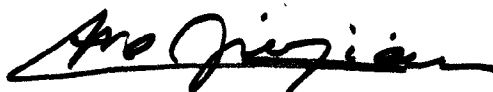
Discontinue purchase of steam from Consolidated Edison upon implementation of item 2 below.

Install an oil fired steam generating plant including a boiler, fuel oil storage tank, prefabricated stack, etc. for the generation of low pressure steam. Connect all new and existing steam consuming equipment and systems to the new boiler. Please note that the Storage room #14 shall be used for the oil storage facilities.

It is further recommended that the plans and specifications for this Alteration Project include other energy conservation items such as:

- a. Converting the Gulbenkian Building from steam to hot water.
- b. Converting the HVAC unit steam coils from steam to hot water.
- c. Additional temperature control devices if needed.

These additional items may be handled by means of "Alternate Bids" and their selection can be determined subsequent to the receipt of bids.



R E C O M M E N D A T I O N # 1.

FROM: WAYS AND MEANS COMMITTEE

June 10, 1975

TO: DIOCESAN COUNCIL

SUBJECT: STEAM GENERATION INSTEAD OF PURCHASING STEAM

Our analysis of the feasibility study prepared by A.D.Jilajian and Associates in January 1975 leads us to a conclusion, without any doubt or reservations, that the proposed change from "steam purchased from Con Edison" to "steam generated in our own low pressure steam plant" at an estimated cost of under \$ 90,000 will indeed result in yearly savings of at least \$ 28,000 in the costs of operating the Diocesan building complex.

Our consultations with the representatives of financial institutions convinced us that the assets of the Cathedral Fund will make it possible to secure a 3 to 4 year loan, at prevailing interest rates, to finance this project.

The Ways and Means Committee, therefore, herewith requests the authorization of the Diocesan Council to proceed with this project.

Up to six months may be required to lay out detailed drawings, complete specifications, secure and analyse bids from equipment suppliers, secure permits, negotiate with Con Edison and complete the installation. Therefore your decision today is requested to schedule completion of the project in 1975.

We intend to have this project executed by the firm of heating and air conditioning consulting engineers A.D.Jilajian and Associates, in collaboration with the special Diocesan STEAM PLANT COMMITTEE to consist of:

Harry Dagavarian, Project Manager

George Mekerian, Technical Advisor

Jon D. Simonian, Financial Advisor

Edward M. Chapien, Legal Advisor

Stephen Kambourian, Diocesan Liaison

Arnold Schmidt, Building Superintendent

Dr. Nikit Ordjanian, (W & M) Liaison

JAMES MONGITORE ASSOCIATES

Consulting Engineers

101 PARK AVENUE
NEW YORK 17, N. Y.

MURRAY HILL 3-7240

Jilajian
COPY

January 17, 1966

Steinmann and Cain
Architects
101 Park Ave.
New York 17, N.Y.

Re: Armenian Cathedral
& Cultural Center

Attention: Mr. E. Gawlicki

Gentlemen:

This is in response to the question raised by Mr. Jilajian at the Technical Meeting Jan. 11, 1966 regarding difference in heating system between existing building and new additions. The existing building is heated by a two-pipe steam heating system, while the new portions, except where air conditioned by means of a forced air systems are heated by means of a forced hot water system.

It was decided in the early stages of the project that a forced hot water system was best suited for the new sections because a flow thru arrangement was contemplated on the upper floors of the Cultural Center, and also that the levels below the first floor level would be best served by forced hot water where trenches and condensate pumps would not be required for the lower levels.

We had been given to understand that the present building heating system was satisfactory, and based on this information, did not attempt to change the system except where building alterations required changes.

After the bids had been submitted, and discussions were in progress regarding reduction of costs in the temperature control system, Mr. Jilajian felt that the existing building might well have been converted to forced hot water, and that additional individual controls might be considered.

Accordingly, an addendum was issued requesting the Contractor to submit cost of converting the present system to forced hot water and to provide additional individual temperature controls. The Contractor found the space conditions so difficult that the changeover would cost in excess of ten thousand dollars, at which point, we felt that since we were attempting to reduce the cost, that the present system should be retained.

Very truly yours,

James Mongitore
James Mongitore