



## **CEI Training Manual No. 4**

for

Senior Management

## **16 Case Studies**

Important Technology Learned on the  
Slavutych Study Tour to the U.S.

## **Construction**

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## **U.S. Host Companies visited by Tour Members**

American Homes, Decatur, Indiana  
Armstrong Ceiling, Cincinnati, Ohio  
Bar Code Industrial Systems, Cincinnati, Ohio  
Bobcat Co., Cincinnati, Ohio  
Cinergy – East Bend Station, Cincinnati, Ohio  
Cinergy - Zimmer Station, Cincinnati, Ohio  
Contractors Materials, Inc., Cincinnati, Ohio  
Contractors Warehouse, Cincinnati, Ohio  
Drivet Systems, Cincinnati, Ohio  
Dugan & Meyers, Cincinnati, Ohio  
Florida Tile Co., Erlanger, Kentucky  
Formica Corporation, Cincinnati, Ohio  
Franklin Brick, Cincinnati, Ohio  
Fujitec Elevators, Cincinnati, Ohio  
H.C. Nutting Co, Cincinnati, Ohio  
Janell, Cincinnati, Ohio  
Marvin Windows, Warroad, Minnesota  
Ohio Valley Precast, Cincinnati, Ohio  
Senco, Cincinnati, Ohio  
Southern Ohio Fabricators, Batavia, Ohio  
South Down Cement Co., Cincinnati, Ohio  
Timberline, Cincinnati, Ohio  
Tri-State Software, Cincinnati, Ohio  
Turnbull Concrete, Cincinnati, Ohio  
Turner Construction, Cincinnati, Ohio

# **Important Lessons Learned on the U.S. Slavutych Construction Study Tour**

November 24, 2001

## **Introduction**

At the completion of the Slavutych Construction study tour to the U.S., the Center for Economic Initiatives (CEI) conducted conferences with each of the participants to discuss the U.S. company visitation program and to assess the technology learned by the participants. It was anticipated that there would be few benefits to the Slavutych firms in the field of marketing, but benefits in management and technology were expected. The tour concentrated on structural and testing sectors of the construction industry.

Many of the participants talked about their great interest in U.S. management and organization methods in construction. Much of this is based on the fact that they do not use Pert Charts and other tools to identify timing sequence problems and bottlenecks ahead of time. They also do not have clearly defined job responsibilities. As a result, critical materials and items often arrive late to the site with the result that the overall project is negatively impacted.

The results based on what was learned indicate that dramatic improvements for Slavutych and Chernobyl facilities can be achieved. In summary, key improvements learned in the U.S. for application in Slavutych as stated by several of the participants include:

1. "I think, if you take all the information I have learned on the tour, I will be able to use 60 to 70%. This is the amount that I really will be able to implement in reality."
2. "I will absolutely be able to reduce costs and increase profits. There are two areas. The first is that I will try to get or develop at my plant a special computer program or database because what I need is a database of suppliers of materials. I also definitely need information about the competitive companies so I will know what position my company occupies in my field in the current Ukrainian market."
3. "I am going to make changes which will definitely decrease costs and increase the efficiency of production. I will reorganize the hierarchy of my company and the work-in-process schedule. Since I saw how it was organized in the US, I will definitely review my entire system of production."
4. "We have a huge problem in Slavutich with our roofing because most of our roofing is just the regular flat roofing and we use presently available roofing sheets. Unfortunately, the sheets do not have a life guarantee of as much as 20 years. It is actually significantly less than 20 years. I have looked at new roofing materials in the U.S. and can definitely say that it is really going to last at least 20 years - if not more. That we don't have right now."
5. "I cannot give percentages of savings in roofing material and labor costs, but if we get the deal we need, in the best situation we will save 40%."
6. "I would say that there is a possibility of building a small experimental plant like Marvin Windows in Slavutich. Of course, it would take some time to study the market, to study the demand, to see how the final product can be sold in this market."
7. "We want to establish an association of construction companies on the basis of the example of the Allied Construction Industries Association. It will be very good to exchange information, to help each other to get the necessary information and data about contracts, and to know what is going on in the construction industry."

8. "I think that probably the way leasing is done here in the United States is the second most important thing for me. This I learned here in the U.S. and I'm going to try at least to change the situation in Ukraine relating to this issue."
9. "There is a great demand for a Bobcat even though the labor cost is still low in a lot of big cities in Ukraine, and in particular in Slavutich. The members of our group from Slavutich saw how much you can reduce expenses and how much you can accelerate the finishing of the construction project using this type of mechanical device. Yes, there is a great need for Bobcats. We have a great demand for this type of machine."
10. "Right now you cannot even expect Ukrainians to invest in Ukraine. Now in the current situation there are people who are ready to invest their money but they just don't because they don't know what is going to come out of it."
11. "The most impressive thing for me, and the thing I am going to implement, is a quality control system. I will implement it everywhere - at any type of production facility, and at any company. Our quality control system is based on totally different principles."
12. "Out of all the video tapes the study tour members are filming we are going to make one complete film. And in addition we would definitely like to have a photo exhibition."
13. "I really liked the testing labs here, especially the testing equipment. I liked the variety of re-enforced cement blocks at the sites we visited. These blocks are really needed in Ukraine."
14. "I am considering making prefabricated homes. I already have a plant which is not very big, but it has a sufficient capacity."
15. "Most of all I liked the organization of the construction process. From the technological point of view I cannot say that I saw anything totally new, unseen, and unique, but the way construction is organized is really impressive."

Finally, all members were impressed by the organization of the U.S. firms. They will return to Slavutych and try to implement many of the new ideas they learned on the CEI study tour.

## **Case 1: Viktor Galamay, Lead Engineer, Chernobyl Nuclear Power Plant, “Sarcophagus” Unit Construction Department**

### Company profile

Number of employees in 2001 was 800

The “Sarcophagus” was constructed in 1986 to isolate the devastated energy unit # 4. In 1998 the SIP International Program began. It is aimed at transforming the “Sarcophagus” into an ecologically safe unit.

The goals of the “Sarcophagus” Unit personnel are to remove, condition, and store radioactive materials created after the accident in energy unit # 4; to ensure control over the current radioactive materials; and to control technical operations used in removing nuclear materials.

In order to achieve the above goals, our operations need to be highly power-use intensive. An outdoor switch-gear (110/6 kilovolts) will be erected to increase the reliability of our power-supply. Peculiarities associated with high radiation fields need to be taken into consideration during the course of this work. It will affect the quality of the radioactive materials assembled and the type of equipment shipped and stored.

### Viktor Galamay presentation

The trip was very successful and I saw things for the first time that I had not seen before. But especially important for me was the American style of business communication. Business people are very open, very friendly. In our country, in Ukraine, a lot of managers use just the opposite communication technology. I work at the nuclear power plant in the construction of the second shelter. It would be very pleasant for me to adopt the U.S. practice in my role as the manager of this small company subdivision. I was pleased to see that this approach is the right approach. I will try to implement this type of conversation, this method of business communication.

The work on the second shelter hasn’t begun yet. I am a participant in the design group. We are now working on the stabilization of the metal work inside the first shelter. We have at the power station an international group of project managers which includes American specialists and we cooperate very closely with them. At present a preliminary approach is being used for the bidding procedures and for the erection of the second shelter. I would like to see American organizations involved in this project.

My goal for this trip was to see methods of managing construction work under a single contractor. But I unfortunately didn’t completely understand this management procedure. By the way, each American specialist member of this international management group also uses this procedure when a single contractor participates in the work. But I haven’t completely understood it. Unfortunately our Ukrainian legislation doesn’t allow us to implement this single contractor system in Ukraine.

I will continue to communicate with the Tour Director, probably by e-mail. That will be very useful, especially after I return to Ukraine.

I think that this trip has been very useful for me and after my return home I will recommend to the Ukrainian members from this management group, that we keep in touch with the Center for Economic Initiatives in order to help us design similar management programs for our specialists. This specialist work is within the program of the U.S. Department of Energy. This improved management procedure will benefit members from the international management group of the nuclear power plant.

I saw many other management procedures here that would also be of interest to them, particularly the method of implementing a turnkey project. I will try to get in touch with the highest management level of this international management group to share this experience gained here and to recommend implementation of additional study tours to explore turnkey methods further.

Technically it will be difficult for me to directly implement the information I have learned because I do not work at a private company but at a state run enterprise. If I had my own business I alone would change the whole scheme of management. But I am only responsible for a small subdivision of our office so I will try to implement the U.S. scheme of work organization there.

I would like to add that my work is coordinated with many design institutes and construction companies. I will disseminate information gained here with them and I think that they will be very interested in organizing a similar program for their staff. Possibly there will be more in depth discussions with an emphasis on this new organization technology if we are to implement this modern advanced technology in the design work which is conducted in Ukraine.

### Dissemination

I will pass on what I learned to five directors of design institutes located in different parts of Ukraine. I will also talk to the 30 people employed in my division. I will also try to disseminate this information through the mass media in Slavutich.

There is so much information for me to absorb that I need some time to process it, to think it over. I also am the only person of our group who saw how the American medical system works since I visited a hospital after playing soccer at the CEI picnic.

I extend an invitation to CEI for our holiday called "Day of the Town". On this day all representatives of the companies involved in construction in the town of Slavutich will get together. We will be very pleased to see you. It will be the first Saturday in June and we will send additional information to you.

## **Case 2: Valeriy Koryagin, Director, Spetsenergmontazh**

### Company profile

The number of employees in 2001 was 137.

Spetsenergmontazh enterprise was established in March 1996 to produce and assemble air ventilation and conditioning systems in Slavutich and at the Chernobyl Nuclear Power Station. Specialists of the company also participated in constructing power-generating units at the Chernobyl, Kursk, South-Ukrainian, Khmelnytsky and Smolensk Nuclear Power Stations.

The company is located in the industrial area of Slavutich. It has a total of 59,000 square meters (production shop – 510 square meters). The enterprise has all the equipment necessary for production and assembly of ventilation systems and metalwork. Types of construction: 80 % - residential; 20 % - industrial. Their market share is 50 % - in Slavutich and 1 to 2 % - in the ChNPP zone.

The company also has 6 trucks and 1 truck crane (8 tons).

Our enterprise assembled ventilation systems at almost all the buildings in Slavutich: secondary schools, kindergartens, the music school, the International laboratories of technology and research, houses, etc.

In 2001 the company conducted work at the "Sarcophagus" unit of Chernobyl Nuclear Power Station and at the Khmelnytsky Nuclear Power Station.

Spetsenergomontazh Enterprise is a general contractor in Slavutich. It subcontracts to the following companies: “Strum-Slavutich”, “Atma-Stroy”, “Palvi” Ltd, “Electrospetsstroy” JSC, and others.

### Valeriy Koryagin presentation

I have learned a lot of interesting things and it will take many hours to discuss them. They cover geographical locations and soils issues in construction. I was also very impressed by our visit to a huge warehouse of construction materials. I was further impressed by visits to the Caterpillar and Bobcat companies. Currently we have problems with the quality of our construction equipment and construction machinery, so it’s a crucial issue for our country. Besides, there are different approaches to the construction process and to the use of different materials so there are a lot of issues to think about. After I go back I will make an economic analysis comparing the production cost of the houses made by the American Homes Company and construction of our houses in Ukraine. Which is cheaper?

I am referring to the small houses built in the country, and to big homes for wealthy people. After yesterday’s presentation by the producers of construction materials at the University of Cincinnati, I tried to understand why American people have a strong tradition of ownership for land, and why they prefer to build such light construction homes made of wood, not of bricks and stone. In contrast, the Ukrainian and Russian people never had their own land. They are just given a very small lot of land and yet they build very big houses made of brick and metal. I came to the conclusion that maybe it is because our people don’t have ownership of land. They don’t have a lot of friends so when they get this small piece of land they just want to be settled on it for many years.

It is much simpler to use wood construction. The approach is different in Ukraine and in the U.S. In Ukraine we have not the same but similar types of wooden houses. For example, in the U.S., when you install a roof, you underlay very thin boards very close to each other. In Ukraine, we prefer to lay thick logs but at a greater distance so it just looks stronger.

After comparing the cost of building houses in each country, we will see which is most economically efficient. We will build a sample U.S. style house and we already have several orders. We also have now several orders for cottages but these are for regular Ukraine type cottages made of bricks. If the construction technology is efficient, we first will construct a sample U.S. type wooden house and we will try to persuade our clients that this technology is better than our traditional one. I am sure that in this country the production of such wooden houses would be much cheaper, despite the fact that we need to use more manual labor although our materials and our labor costs are much lower than in your country. In fact alternative construction choices are very complicated. For example, most of the construction methods and materials that we have seen here are familiar to us. We have such technologies in Ukraine but we don’t have industrial production sources for these technologies because they require a lot of investment and in Ukraine, limited by our legislation, the issue of the land ownership hasn’t yet been resolved. Even an American investor over here is afraid to invest money in the development of production facilities until he is sure he owns the land.

Existing businesses in Ukraine currently are developing only horizontally. Companies are afraid; they don’t want to implement new technologies to increase productivity, but they prefer to expand and increase their volume based on using existing technologies, existing equipment, and existing production cycles.

The first thing I will do after my return to Ukraine is to organize my construction process. The past situation in the former Soviet Union is that we once had a lot of large ministries, which

had a lot of machinery, different types of machinery, and the easiest thing for an enterprise needing to perform some construction work was just to ask for it and for the Ministry would give them the equipment. Currently this system collapsed completely and now small construction enterprises don't have any place where they can rent equipment. They need to buy equipment. For example, if we have some project we buy the equipment needed for the project. But after the project is finished, we don't know what to do with this equipment. We don't need it any longer. So now I will try to organize one company in which we will collect all the equipment of small private enterprises and will organize a leasing program for this equipment.

I am sure that I will be able to use at least 50% of the information that I have learned, perhaps not tomorrow, but the day after tomorrow. There are a lot of small interesting construction details which I will try to implement just after returning home.

Under current circumstances I cannot estimate how the study tour will affect our profitability. There are a lot of obstacles. For example, if I took plans from here and implemented them as is, in Ukraine it will reduce our costs three times - at least the cost of production. But we have a lot of obstacles which cannot be overcome beforehand.

I have worked in the construction business since 1991. I have extensive experience; I used to work in Kiev. The only way our businessmen can operate right now is to rent facilities since they cannot buy them. So for our business I had to rent a rather obsolete facility, all very old. When I signed the rent contract I rebuilt the building, installed new equipment and began production. But, for example, if the governmental official who also signs this contract for rental is replaced by somebody else, and we now don't have a good relationship with him, the government official will just cancel this agreement at once. And this is how I lost \$50,000. That is big money in our country.

If we had this issue of land ownership solved, it would be much easier to attract American businesses, for example Marvin Windows, and to interest American investors, American money, and American technologies.

Our parliament (Verkhovna Rada) is just now doing what happened in Russia several years ago.

### Dissemination

I will speak to a lot of people. First of all, after I return home we will organize a roundtable at the Slavutich TV station. Since we have good relationships with one of the national TV channels I hope that this roundtable will go on the air all over Ukraine. This information will be disseminated in different segments to not less than 500,000 people.

My company now has 250 employees so I will disseminate this information to them first of all. I think perhaps I will also reach 250 additional people.

Taking into consideration that representatives from government and also deputies in our country are interested in what we have learned, I will participate in this roundtable. The main issue that I will tell is that the United States is much ahead of our country because you have a very long tradition of land ownership and that in our country the lack of this ownership law impedes our development very much. Our people know that currently the government is not the best representative of the people.

### **Case 3: Vyacheslav Pochev, Chernobyl Nuclear Power Plant, Department Head, Capital Construction Department**

#### Company profile

The number of employees in 2001 was 13.

This group, which is charged with the maintenance and construction of industrial boilers, was organized in 1997. In 2000, it was renamed the Construction Maintenance Section. The enterprise is a subdivision of the Chernobyl Nuclear Power Station. The Section manages construction of one unit – the ChNPP industrial boiler. In summer the enterprise conducts 60 % of its operations; in winter – 40 %.

Their market share in 2001 was 20 %.

In the course of boiler construction the enterprise orders equipment and personnel training from the following companies: “Schneider Electric” (France), “Computel Inc” (France), “Exportronic” (Germany), “Berkefeld” (Germany), “Tyco Electronics Raychem GmbH” (Germany), “Promotex Electronic” (Germany), “Honeywell Controls International LTD” (Cyprus), “Benning GmbH” (Germany).

### Vyacheslav Pochep presentation

I have seen a lot of very interesting things here in the United States and a lot of them can be implemented in Ukraine, but the major obstacle in this process is lack of capital. If we had the funds we could implement a lot of the interesting things we saw here.

I represent a customer organization contracting for different types of construction work. As a customer, I would like very much to have construction companies such as those I saw in America. These are companies who use advanced construction technologies. I will contact these members of this U.S. contractor group; they are desirable contractors for my organization. After I go back we will try to organize production in accordance with the construction methods that I saw here and I will try to support them.

Each business enterprise in Ukraine has two main duties. The first is to manufacture products and the second is to obtain construction equipment in order to construct the necessary facilities. I am the head of the Department of Capital Construction. This department provides project management, approves the contractors and sub-contractors, and conducts the purchasing for the project. We will try to use companies who use more advanced technologies.

We will be able to use at least 20 - 25% of all the construction information we saw here.

This U.S. information will impact the quality of our work, but this will depend on the type of construction. The quality control requirements which are applied in the United States are a bit higher than in Ukraine. I would say the quality of work performed in the United States is much higher but we have different codes. For example, there are different codes for fire safety; the codes for safety are much stricter in Ukraine. The architectural design work which is done in Ukraine is also of lower quality than the same work in the United States from what I saw when I visited different construction sites here. I think design is done much better here. I would be very pleased to implement such projects and designs in Ukraine but unfortunately we don't have sufficient companies and sufficient technologies to make it possible. Each customer wants to have the work done at a high quality level.

American design is much more detailed; each of the smallest elements is described. For example, in American design, if a brick wall is specified, the designer specifies each detail of the wall and which type of brick can be used. For example, he will specify which bricks are to go in the middle of the wall, in the corner of the wall, and he will tell where to place the plumbing. In our country blueprints are also made by sections. For example, one blueprint is for the overall construction, another part is for the electrical design, and another part is for the plumbing design. When you try to put all these designs together sometimes conflicts occur. Besides, materials which are used in the United States are much more flexible. For example, in the materials in the

United States if you have some mistakes in the design you can more easily correct this mistake during construction, using of course the highly technical abilities of your materials. In Ukraine, if a project is made with big bricks or blocks of concrete, this cannot be done. Our design work is not done by computer.

From my experience of working in corporations and with different general design institutes, I have never faced such complete usage of computer designs as in the U.S. In our country computing is usually done by hand. The problem is that in our country computers are expensive and design software is even more expensive. In order to pay back its cost, each company needs to work a very long time. Large design institutes have recently begun to collapse into small private companies, small private enterprises.

In our town we have perhaps a couple of design companies and they are in competition with each other. So I don't know if this process of extensive computer use can be possible in our town although I am sure that the future is with computer technology. Despite the fact that we are much behind the United States we wish to develop because without it our people cannot achieve anything.

### Dissemination

In Slavutich we have town meetings each Tuesday and all the heads, all the directors, all the managers of the construction companies are present at each meeting. At these meetings I will disseminate the information I obtained to all the construction companies in Slavutich and the surrounding regions. I have already collected a lot of different materials and brochures, so they will see what technology they might like to take out of the United States. All of these contractors will see these materials. I will probably talk to representatives of about 40 companies.

Our group has three video cameras and after I come back we will try to make one video film and I plan to submit this video film to the Ministry of Energy policy of Ukraine. They have a department of capital construction so maybe through them we will be able to disseminate this video film and this information to many companies all over Ukraine.

## **Case 4: Lyudmyla Ivanova, Chief Engineer, Ukrenergobud**

### Company profile

The company currently employs 650.

Since its founding in 1995, the company has been mainly conducting civil engineering and assembly work. In 2001 it is building two dwelling houses in Vyshgorod and several facilities at the Chernobyl Nuclear Power Plant and "Sarcophagus" Unit. The company has its own laboratory which runs quality control of all the construction operations and production of concrete at three factories. "Ukrenergobud" Collective Enterprise produces concrete of different grades, reinforced concrete products, mortar and metalwork.

### Lyudmyla Ivanova presentation

My impression of the study tour is that most things in the U.S. are done in a more progressive way than in Ukraine. It is much easier and more interesting to work in the U.S. since the system works for them. This is helped by the availability of product information, equipment, and supporting devices. It was disappointing to see how far behind Ukraine is.

I am the head of a testing lab and I was greatly impressed with the testing labs here, especially the testing equipment. I liked the variety of re-enforced cement blocks at the sites we visited. Such blocks are really needed in Ukraine. In the U.S they build more construction with

blocks than we do in Ukraine.

I have special feelings connected with the visit to the H.C. Nutting lab. The first was the original design of the building itself. The good working atmosphere of the lab also had a big effect on me.

I felt that the staff of the lab was highly qualified. There was definitely mutual trust, understanding, respect, team-work, and order there. There was also a great variety of high quality test equipment. In Ukraine we do not have such a large number of methods and equipment in our construction labs. I saw work on a high scientific level here.

There was a great variety of applications including soils, concrete, asphalt concrete and all the basic analysis. There was a large volume of accompanying express method analysis. My dream and goal is to apply as many express-methods as possible in the operation of our lab in Slavutych.

The equipment in the lab impressed me with its variety and number of laboratory tools, devices, and instruments. The main disadvantage of a lab in Ukraine is the lack of modern high-tech equipment and devices.

I was impressed with the approach to the storage of cylinder samples according to the requirements of international standards. I also saw an automatic sprinkling system for concrete samples, with its stacking, transportation, age control, etc.

I also noted the availability of devices which help to conduct testing during the early periods of concrete formation (up to 28 days) using destructive and non-destructive testing methods. For the first time I saw cylinder shaped concrete samples (we use cubes in Ukraine), when they test the strength of concrete. In Ukraine we use cylinders only to test water penetration. Besides, in Ukraine we have single, double and triple cell metal forms, and in the U.S. they are made of plastic instead of metal, so it is much easier to work with them.

The concrete formulas are very similar in both countries in their basic components such as plasterers, air insertion, and other chemical add-mixtures.

As for the work done in H.C. Nutting in terms of steel and welding joints, I was also impressed by the variety of methods, equipment, accompanying devices and chemical materials for the lab tests.

I was interested in the method of testing for magnetic particles. I have not seen this method used in Ukraine and I would like to purchase such a device and master this application.

It is obvious that good working and financial conditions are created for the personnel of the lab. Unfortunately the situation in Ukraine is far different.

I liked the fact that U.S. manufacturers are not afraid to share information and some were interested in building a relationship with us. I learned much from the visits to Florida Tile, the University of Cincinnati round tables, Formica, the Block Styrofoam system, and J & J Carpeting.

I want to have my own independent testing lab and they have agreed to establish it when we return to Slavutych. I plan to talk with the Mayor about this. A testing lab would also help reduce construction costs in Slavutych.

Right now I work for a closed joint stock company that operates on the nuclear waste from the Chernobyl Nuclear Power Plant. I want to increase the variety of concrete blocks. We are planning to get a Reading Rock catalogue to facilitate this.

A testing lab in Slavutych would help reduce construction costs in Slavutych. Financially it would help since all of the money would stay in Slavutych.

## Dissemination

All the workers in the testing lab are interested in what I have learned so I will make a presentation to all of them. This is going to include about 500 people.

### **Case 5: Yuriy Ostryanin, Deputy Department Head, Chernobyl Nuclear Power Plant, Turbine Department**

#### Company profile

This department at the Chernobyl Nuclear Power Plant is charged with maintaining the cooling facilities at the power plant.

A lot of ChNPP buildings and facilities have their floors lower than the ground water level. Owing to wet seal faults there are many semi-flooding cases. This problem exists not only at ChNPP units, but also at the “Sarcophagus” Unit and in different industrial buildings located in Slavutich. Water proofing coverings badly need repairs. It is rather expensive and it is difficult to repair external water proofing covering. We are investigating the use of techniques of wet seal restoration by applying putting special water proofing compounds on interior surfaces of premises.

#### Yuriy Ostryanin presentation

The key conclusion that I made on this trip is that each enterprise, each company, needs to maximize and rationalize its activities. This approach will allow us to achieve the best results and the best service quality, allowing for the fact that time at present is greatly wasted in non-productive operations. This possibility of hastening the process can be realized at once by using some of the modern technologies and special devices we saw in the U.S. For example, as we saw at the precast concrete plant, they have very good technique for forming very long pieces of concrete. Then they cut it which is very unusual for our country. It would be impossible for them to do so if they had not developed some flexible reinforcement because with inflexible reinforcement this cannot be done. And this approach also allows the American firm to greatly reduce the cost of labor. For example, 70 people in this American plant can generate an output of several million dollars.

First of all, when I go back to my company, I will analyze to see if I can use anything from this new approach, the new technologies, and the new devices in order to maximize the efficiency of all the operations of my company.

It is also interesting for us that in the United States there is a lot of work for subcontractors and each of them is involved in his own very specific area of construction. For example, it provides an opportunity for one company to produce metal elements and another company just to assemble them. Another company produces a special type of brick just for corners. We don't have such an approach in Ukraine. So in the U.S. in order to erect a building you need just to assemble all the parts. And this also would not be possible without very detailed documentation with all types of specifications. We have very few such companies in Ukraine.

I don't think we can reuse the miles and miles of electrical wire removed from the nuclear project. It is mostly copper wire. It can only be used as scrap metal. There are plans to create a metal re-processing factory. This project is currently in the initial stages so there is only a space allocated where it will be built. Maybe somebody knows its status because this project started in 1995. I think that maybe I don't know very much because nothing has been done since 1995. This company operates within the Ministry of Fuel and Energy Technology in Ukraine.

We have already completed a total examination of all the equipment needed for the radiation container in order to decide which parts can be reprocessed and which cannot. But this examination covers only the large pieces of equipment - not the wiring. We also have a

department dealing with desalination. They have a director of radiation tests; his department is called the Department of Radiological Safety and this department includes a laboratory.

It is difficult to say right now what ideas I will be able to use when I return to Ukraine because I am overwhelmed with different information. But currently I think at this point that one of the most interesting ideas is the technology we saw at Marvin Windows.

### Dissemination

I think I will speak to not less than 50 entrepreneurs and maybe 50 additional people who are involved in my area of the construction business and maybe to my friends and relatives. Then I plan to publish a report in the local newspaper. I will translate some product and company brochures and publish them in the newspaper.

## **Case 6: Yuriy Fomichev, Director General, SKS**

### Company profile

The company was established in 1999 to provide services of construction and erection work, and complex repairs to various premises. The company conducts a whole range of construction work from development of design-models using modern computer technologies to finishing work and equipment installation.

At the beginning of SKS operations, the company's clients were private individuals. Over the course of the enterprise development, the list of its clients has considerably changed. Through promotion activities, SKS received contracts to conduct work at the facilities of the Slavutich Laboratory of International Research and Technologies, the International Radio-Ecological Laboratory, etc.

The enterprise has managed to increase its production volume through improvement and development of various stages of its production processes, the introduction of advanced construction technology, and through the use of construction materials of high quality, which are certificated in Ukraine. The company uses equipment made by leading foreign companies. The company's market share is 1.8%

In 2001 the company had 18 employees.

### Yuriy Fomichev presentation

The impression of American construction methods and the organization of construction I got is tremendous. Within such a short period of time we managed to see and to try to understand not only the system of construction industry operations in the United States, but the way the society in this country operates.

On the basis of everything that I have seen it would not be right to say that I am going to implement some improvement directly in a week, for example, because we could not possibly do it. Of course, there are many new ideas that can be potentially implemented, but we need to analyze them, to review them, to get them all together and discuss them with other people. In the course of this discussion we might get a whole chain of other ideas and other opinions which will help us in the long run to organize some substantial innovation. The main thing that I want to stress is that we have had a development concept for a long time in Slavutich and we now have seen it here in the States in such a functioning and perfect operation.

We want to establish our own association of construction companies on the basis of the example of the Allied Construction Industries Association. It will be good to exchange information, to help each other to get necessary information and data about contracts, and to know

what is going on in the construction industry.

Such an association would be very good in terms of facilitating reemployment of the staff of the nuclear power plant in Slavutich. There are a lot of construction companies that are working on various types of projects and there are also ongoing international projects right now. If we have an association it would be easier for us to find our niche, to find our place in this market and to win bids. Because in this period, when we have international companies working on our projects, if approached properly, it would help us lay the foundation to become known to the whole construction market in Ukraine, because we in Slavutich right now are rather limited and somewhat separated from the rest of Ukraine.

As for the issue of establishing new production facilities in Slavutich, this is a much more complicated issue because we still don't have a law about land ownership in Ukraine. Of course no investor or any person will at present buy land and then build a production facility because of the lack of existing proper laws.

If I were able to apply and implement everything I learned that I want to do right now I can estimate that I would be able to reduce the period of construction, the regulated, the normally agreed period of construction in Ukraine by at least up to 7 to 10%. As for the financial impact, unfortunately I would have to say that we have to totally change the whole existing credit system because our system of extending credit and of giving loans, for construction companies to conduct their construction projects does not work at all right now. And the same can be said about our system of leasing. Unfortunately leasing doesn't work properly. I think that probably the way leasing is done here in the United States is the second most important thing I learned. I observed this in the U.S. and I'm going to try at least to change the leasing procedures in Ukraine.

I am interested in Bobcat equipment and it was very good that we discovered that representatives of this company can be found not only in Western Europe but also in Eastern Europe and in particular in Russia. This gives us the possibility of establishing a production facility as well as a distribution center in Slavutich, all without substantial transportation and shipping costs.

I am not talking about Bobcat production facilities right now because of the land and plant investment issues. I am talking about establishing a distribution center which would primarily deal not only with selling but also with leasing because that is the big problem in the Ukraine. There are a lot of companies who own equipment. If they needed other additional equipment I can only sell it to them because it is not profitable for me to lease it. But the customer would rather rent than buy.

There is a great demand for Bobcats even though labor cost is still low in a lot of big cities in Ukraine, and in particular in Slavutich. The members of our group from Slavutich saw how much you can reduce expenses and how much you can accelerate the finishing of construction projects using this type of mechanical device. We have a great demand for this type of machine. Of course, we have other equipment that we are currently using because we cannot avoid using it. This equipment works and we use it on a regular basis but it actually costs us much more to store and maintain it. We have to pay two people to operate it because it is a very big and complicated machine. We can maneuver the smaller Bobcat equipment very well and that is what we need. The things I liked most on the tour were the visits to the Marvin Windows and Bobcat companies. In Kiev they have a machine similar to a Bobcat, but it is not a Bobcat. Not Bobcat, but others.

I learned much from the visit to the reinforced precast concrete plant, the Ohio Valley Precast Company. It was great. Personally I think that if we will give this pre-cast concrete information to the right people it is highly possible we will be able to establish such a plant in Ukraine because the startup cost of a new plant is not that high. We know that firms are using

comparable equipment from Finland. And another factor is that this Finnish equipped pre-cast concrete assembly line is actually operating with new equipment. So it is highly possible that a plant similar to Bobcat can be organized in Ukraine. However, this can only be done after the land and credit problem have been solved. But this plant should be the first to be established.

You can now lease land if you are organizing a firm for assembling, such as some device or mechanized parts for houses. But if you are talking about the plant like Ohio Valley Precast where a company needs to make a substantial capital investment, it is much better to wait until the land problem has been solved and then start building it. Of course, right now we can start by leasing land and possibly establishing a small assembly company. But the precast concrete plant is going to have to wait.

Right now you cannot even expect Ukrainians to invest in Ukraine. At present in the current situation there are people who are ready to invest their money but they just don't invest because they don't know what is going to come out of it. There are still some vacant buildings in the smaller cities. This is the least of our problems. We also have a problem trying to prepare the required leasing documentation. Banks don't have the cash to lease plus it's a very bureaucratic and disappointing process seen in our attempt to lease a place for a warehouse. We actually did it but it took us forever. You can get a nervous breakdown trying to prepare all the documents. Unfortunately it works very slowly right now but hopefully it will change. In this case it is the bureaucracy, not the money availability. In order to finish the documentation you have to get at least 20 signatures and everybody tells you they will give it to you at the last minute just go to somebody else first.

There are fewer problems with the tax police in Slavutych because it is a fairly small city and everybody knows everybody so it would be difficult to hide things. It's much simpler and the fact that Slavutich is a special economic zone also plays a favorable role.

### Dissemination

There are two types of information I am going to disseminate. The first is my view of American social life, about the way of living, about traditions, and about socially related factors. The second one is about production and industrial information that I am going to share with my colleagues. This can be practically used throughout the future.

I will be contacting about 100 people. And, of course, those people will share it with others, but the number of my direct contacts is going to be about 100.

### **Case 7: Valeriy Moshel, Chief Engineer, Electrospeystroy - Slavutych**

#### Company profile

Electrospeystroy – Established in Slavutich in February 1997. In 2001 it employed 18.

The company is involved in the following activities:

1. Electrical installation work (interior and exterior lighting).
2. Adjustment and alignment of equipment
3. Work on networks and automated systems.

The enterprise rents premises located in the industrial area of the town of Slavutich. The lot is 945 square meters including storage facilities (240 square meters); workshops (480 square meters) and an administrative building (225 square meters).

Electrospeystroy – Slavutich CJSC possesses equipment and machinery (domestic and foreign made) necessary for conducting its activities. The company participated in electrical installation work for the International Nuclear Safety Program. Currently the enterprise carries out

electrical installation work at the Slavutich International Radiation-Ecological Laboratory and apartment house # 16 in the town of Slavutich.

Company strengths include:

- State certificate for conducting all types of electrical installation, adjustment and alignment work.
- Extensive staff experience in the construction sphere (5 – 30 years).
- High quality work.
- Strict adherence to terms of work.
- Availability of materials and equipment necessary for conducting all types of electrical installation work quickly and with the utmost in quality.

### Valeriy Moshel presentation

The most important observation for me in the U.S. was the visit to the Dugan & Meyer's commercial construction site where a school was being built. I liked everything there including the organization of construction, the equipment, the materials, and the way the whole process was conducted. That was the most significant part of the study tour. That was interesting for me in particular because I am involved with electrical and electrical mounting work at the Chernobyl construction site. That is why it was very important for me to see the way construction is organized and arranged in the U.S. What I saw was that it is done in a very timely fashion; it goes stage by stage in a perfect order. We also have a production sequence in Ukraine that is supposed to be followed, but in Ukraine there are delays and discrepancies, both technical and common discrepancies, which happen much more frequently in Ukraine than in the U.S. The reasons for this can be different: it's either a delay in materials shipment, or a delay in purchasing the necessary materials because of lack of finances, or a shortage of finances.

In Ukraine there is a construction management system but its effectiveness level is much lower. I will definitely use what was shown to me in the construction management system in the U.S. as an example of what I should strive for and what I should use to go forward.

It is difficult for me to fix a percentage of increased profits if I implement this construction system at my work, but it may be 5 or 10%. This is a rough figure because I have never actually calculated anything like that before. But I will say that in construction in Ukraine now, the important factors that will influence the profitability of any construction project will be not only the construction management system but also the increased technology level and the improved construction equipment.

I will use the U.S. technique of pipe type cable laying even though it might seem a minor detail. The use of these devices for laying cables and trays and the way it is done will significantly improve the work over older methods. Of course, it is going to improve the quality, the life cycle, the durability, and the reliability of this type of installation. The tray type of structure, in comparison with the mock connection method, is much superior and I think it is going to work better and last longer. It will clearly increase the fire safety. It is very important from the point of view of fire safety. We use this method of laying electrical cables and trays only in certain structures which are critical and where there is a potential danger of fire. Here in the U.S. it's just a rule. You just do it everywhere regardless of whether it's a commercial or residential construction project and you still arrange the cables and the electric wiring in trays only. Even though it's more expensive than what we are using in Ukraine now, in the long run it is going to be more beneficial. At the same time it's going to save on labor costs because you don't need as many workers and so many supervisors, even though the cost of the equipment and the actual parts will cost a little bit more. Materials are more expensive but labor cost is less expensive. The

things that matter to me are quality, safety and productivity. These are the three reasons why I want to use his approach.

We were disappointed in some things we saw in the U.S. These are the construction materials. Not all of them, but certain materials which I have seen here in the U.S. that are already present in the Ukrainian markets. Their cost is so great that if you start using these materials, instead of the ones that have been used in the past, it's going to escalate the price of construction projects tremendously. So we cannot just start simply using these materials because we see they are superior. But still you have to look at the whole budget and maybe cut somewhere else. Maybe we should use the higher quality materials because we should improve the durability, reliability, and the life of the structure that you are building. And productivity is also a very important factor.

### Dissemination

In the first week after I return I will have a very deep and thorough discussion with at least 30 people, and that is only within the first week. But again, since I will be going to different construction sites, talking to customers, visiting other companies the number will grow substantially even within the first week. And of course we are not going to be limited in our dissemination by just a couple of weeks. In addition to the 30 people I mentioned, there will be our supervision staff including managers and supervisors and people who do monitoring. There will be about 30 additional people who are in fact employers. Of course there is going to be a conference or lecture organized at the place where I work and I will share my experience with all the workers.

It was a good idea for me to come on this tour. I think there is a lot to learn and there are a lot of ideas that I can put in front of myself as I go forward. I have a handful of ideas to try to implement in the future.

### **Case 8: Olena Sheydorova, Deputy Director, Spetstechnologiya**

#### Company profile

Number of employees: 15 (1 specialist in industrial and civil construction; 6 roofers; 1 mechanical engineer; 1 electrician; 2 drivers; 3 managers, 1 accountant).

This private company was established in 1997. It conducts repairs of roofing (90 % - industrial premises, 10 % - residential houses). Work is carried out during the period from April 1 to November 30, but if U.S. modern technologies could be introduced (for example, Ruscoe roof mastic) work could be conducted in wintertime.

The company's market share in Slavutysh is 15 %.

Amount of roofing (square meters):

1998 – 1,000 square meters

1999 – 15,000 square meters

2000 – 20,000 square meters

2001(est.) – 25,000 square meters

Company equipment includes: Scaffolding; 2 trucks; 3 cranes (1 ton each); 6 sets of roofing repairing equipment; 2 storage areas; 3 bitumen heaters; 6 electric heaters for bitumen and mastic.

#### Olena Sheydorova presentation

If I did not have a language barrier I would definitely say that the United States is my type

of country. I characterize myself as a very responsible person and I always do what I promise, what I am obliged to do, and what I am supposed to do. That is why I like the United States, because that is what I have seen everywhere - at the construction sites, at the plants, at the distribution centers, the warehouses, and all the places we have seen. It is the responsibility and positive attitude of American employees. And, of course, I was much impressed by the way people greeted us everywhere, how openly they answered all of our questions and gave us all the details we needed. I found that all people at the places where we went were really sincere in their discussions with us. Unfortunately, in our country the situation is very often completely different. For me, such a sincere contact that was established with people matters a lot.

The main issue I am going to address at my office the day I return is roofing. I gained a lot of information about roofing and that is what our firm has been doing for quite some time. I gathered a lot of new information during the roundtable meeting with the suppliers of construction materials. I became acquainted with the representatives of the companies that produce a type of building membrane and Styrofoam roofing and I was given samples. I received a lot of technical information and was also given sample packages.

We agreed that we are going to arrange contracts with these U.S. companies. We will supply them not only with information but also introduce them to the leading people in Slavutich and to the management staff in our firms, since they are sales people, we will try to be an interface between them. Of course, they indicated to me that since the United States is very far away from Ukraine they will assist us in finding regional dealers and distributors or perhaps even producers somewhere in either Eastern or Western Europe where there is similar production.

Unfortunately, we have a great problem in Slavutich with our roofing installations because most of our roofing is the regular flat roofing and we use local or Ukrainian prepared roofing sheets. Unfortunately, the sheets do not have a guarantee of as much as 20 years. It is actually significantly less than 20 years.

We also have roofing materials such as mineral fiber prepared roofing sheets including mineral fiber, and asphalt sheets, but they are very thin; and they have a lower quality than even the roofing wood I have seen over here. They are Italian made.

There are three parameters related to the economic efficiency here with roofing. First, the use of this new type of American roofing material is going to reduce our material expenses. Second, this material is much easier to install so we will save on labor costs. And the most important thing is that it will prolong the service life of roofs. I have looked at this material and I can definitely say that it is going to last at least 20 years - if not more. That we don't have right now unfortunately in Ukraine.

The best quality roofing material you can now find in Ukraine has a life of not more than 10 years, and even this quality is very rare. And that is only if you install one layer of cement insulation and four layers of prepared roofing sheets. The life of the average roof is 10 years or less. And that is why now, 12 years after the last major construction period in Slavutych, we have a major problem with roofing. All the buildings just started leaking at the same time.

I cannot give percentages of our potential savings in material and labor costs. I cannot give the number because it is either going to be too big or too small. It will depend on where and for how much we will buy the actual new material for the roofing. If we will get the deal we need, in the best situation we will save 40%.

Another thing I liked here in the U.S. is the quality of concrete, especially concrete floors. I found all the information I need for its application when we visited the Family Dollar Store construction site using a protective material that is sprayed over the concrete floors.

The visit that was really impressive, I would say even astonishing, but unfortunately very

far in the future for us, was both the production of windows at Marvin Windows, and the way that American residential houses and condominiums are built.

We have in Ukraine a large factory near Kiev which manufactures aluminum windows. We also have quite a substantial number of private companies that make so-called fiber glass packages called blocks. These are special window packages, and we also have many distributors who represent foreign companies, but we don't have factories manufacturing a type of window using plastic, metal or wood. And of course, the quality in the U.S. is very attractive - the way the joints are done, and the way the windows are produced. I would say that there is a possibility of building a small experimental plant like Marvin Windows in Slavutich. Of course, it would take some time to study the market, to study the demand, to see how the final product can be sold in this market. But I think a small experimental plant is a good idea for implementation. In the future I realize that we in Slavutych will have to find other employment, not only for highly qualified specialists and professionals who are working in the nuclear power plant but for all those employees with lower qualifications who are now doing service, maintenance, and similar types of jobs. We also will have to create job positions for them as well and such a plant will definitely create the openings for all these workers. And these are persons who cannot just easily change their present place of living because that's where they have their citizenship, that's where they are registered, that's where they have apartments already so they will definitely stay. They just need a place to work. That is why the start up of a plant similar to Marvin Window, but experimental and smaller, will be a very good idea.

### Dissemination

To give an actual number of people I will talk to about this study tour is quite difficult. You get back home and you start receiving tons of phone calls and visitors and everybody is going to ask at work, my friends, my relatives, what did you see, what did you learn, what's new, what have you found out. So at least for the next three weeks I will be sharing my overall impressions and experience and, of course, lots of technical innovations that I learned here. That is just the very beginning. Of course, after a time I will, with the help of my colleagues, differentiate the new technologies so that we will be able to discuss these improvements with workers and managers of other firms so that changes can be implemented directly in the field. Then we will start counting money on profits from the U.S. technologies we have learned.

I expect to talk to about 300 people. I will be telling staff with whom I work right now, and persons I worked with 10 years ago. Those people will tell other people. We have a pretty small city so the information will spread rapidly.

[CEI Question: Why don't you write a roofing article and become the Ukrainian roofing expert?] I think it is actually a good idea, but I probably will not write it by myself. Maybe I will get together with some of the other members of our group. Perhaps not just only about roofing, but perhaps we will write an overall report about our tour to the US. We will write something in the Ukrainian press. We will certainly have articles in our local newspaper and programs on the local TV channel. We will try to do something nationwide wide. We will also discuss writing articles for national journals.

### **Case 9: Sergiy Skreka, Director, Slavutichstroyservice**

#### Company profile

The number of employees in 2001 was 7.

Since the company's founding in May 2001, we have completed several orders for repairing office premises. We plan to sign contracts on the disassembly of Lesnoye village and on the repair of several municipality-owned facilities. Additionally, we provide services on repairing private apartments, country houses and garages.

The company is involved in the industrial (80 %) and residential (20 %) areas.

All the employees of the company have experience with the ChNPP, but the enterprise itself is just now preparing documents which will allow our firm to carry out work at the ChNPP and at the "Sarcophagus" Unit.

### Sergiy Skreka presentation

I need a lot of time to think about all the information I gained because now it's all mixed up in my mind. I was impressed with the ability of your specialists to work with concrete. Also, I was impressed with how your construction sites are organized and managed. A lot of operations can be done in parallel. I was impressed with the precast concrete plant. I also was interested in the technology of roofing which we saw at the storage building which is being built now for the Family Dollar Store. That is an excellent construction site with metal decking and metal siding. I also was interested in some types of equipment used in the construction. This includes the small, mobile, lifting equipment such as the Bobcat, the scissors lift, and the cherry picker. The Bobcat is very mobile and can be used in small limited spaces. I also liked the bar code technology. It's a system that should be adopted in Ukraine. [CEI comment: On the Information Technology study tour from Slavutych they discussed bar coding at length. All construction equipment and materials sold in the U.S. have a bar code]. This is a great system and it should be implemented everywhere in Ukraine.

What we saw will affect me on the job. I believe that the whole study tour group is of the same opinion and they changed their minds during this trip regarding the approach to construction process and application of construction technologies. It is difficult to say right now what new products I can produce or what new technologies I will be able to apply but at this point I think that the best thing that I saw was how these modern and advanced technologies can be applied and what great results can be achieved. Maybe we will be able to use about 5 or 6% of the information I saw here. But I changed my mind 100%.

I have 2 construction jobs. One job is at the nuclear power station and the other is at a very small company that was created just 4 or 5 months ago. This company is going to be involved in refinishing rooms. [CEI comment: This is one of several companies that was established as a direct result of the CEI study tour.] We are going to be involved in interior finishing, in roofing and after this trip to the United States we have also decided to produce concrete forms, including possibly pavers for sidewalks. Maybe we will do something else, but for this moment these are the main options. I need a lot of time to think over all the information and to estimate all the costs and problems. We are going to work on assembling gabled roofs, shingles, etc. We would like to use such materials as used in the shingles we have seen.

### Dissemination

I will talk to not less than 100 people and possibly many more.

## **Case 10: Yuriy Yegorenko, Director, Grand-Service**

### Company profile

The number of employees in 2001 was 16.

The company was established in December 2000 to provide maintenance services and repairs on houses. At present “Grand – Service” Enterprises serves only 8 % of the houses in Slavutich. However, private ownership allows improved quality of services in comparison with state run enterprises, allows greater competition, and, in cases of successful operation, forces state run enterprises out of the market.

An interesting and unique area the company is exploring is providing services that utilize and process domestic and industrial waste.

#### Yuriy Yegorenko presentation

I think the most important thing that I learned here is that regardless of the new advanced technologies and advanced know-how, the most important factor is the different U.S. approach and different way of thinking which I hope we’ll take back to Ukraine. I think the Ukrainian history as a country is longer than the history of the United States. In spite of this fact your country is much ahead of us in technology and in other things. I don’t think development depends on the age of the nation but first and foremost it depends on the intelligence of its people. If you take from the U.S. something that is useful and something which is very good, it cannot be applied completely in its original form in Ukraine, because of the mentality of our people.

For example, in the United States each separate company is not only producing goods but there are many different conditions in which these enterprises operate. The enterprise which was admired by everybody in our group was the precast concrete company. So one assumes that you could just buy the technology, you could buy the production line, the equipment and you could apply it in Ukraine. If it would be so easy, long ago in each city in Ukraine such a production line would have been implemented. The main obstacle is not only to get information about such capital equipment. But, each such company could exist only under your conditions and your legislation.

In our country nobody will risk a lot of money in order to have them paid back in 10 years or 8 years because it is so risky. Such projects can only be done within some state program and if you are working within that state program the conditions will not be improved. So that is why, to change the conditions, first of all they need to learn how to think in a different way, for example, like you think in America.

Yes, it is possible to change our adverse conditions. It can be done, but it is just the beginning of this long road. If you provide all the information that we need, it cannot be realized quickly. We need some time just to accommodate peoples’ minds to this new approach. I think that currently in Slavutich there are the best conditions for such a process anywhere in Ukraine. This means that we have a big responsibility. For eight years this problem has been a part of my work because I am a deputy of the town council. I am not afraid of such responsibility. It is important to change our own mindset. I am sure that each minute of our stay here helped to change our minds. This occurred not only while visiting enterprises, but also while driving in the bus and just looking through the window. Each experience helped us to change our minds, and especially in the course of conversation with others in the U.S. and especially in official meetings.

My company provides maintenance on buildings after they are completed. This tour will help very much. For example, I had to make some decisions before his trip, but I was in doubt about them. But now, after the trip, I am sure that my decisions were correct.

As far as being able to do a better job now, especially in the short term, my company must begin to use these small pieces of American equipment, different type of equipment we saw here for the kind of services we are involved in. And in the next stage I will think about the possibility of producing construction materials such as OSB (Oriented Strand Board) which was discussed at

the roundtable at the University. By the way, in the technical design manual given to us there is a brief description of the production process.

Contract work is rather slow even now but I am sure that I will be able to increase the quality and expand the range of our services. We are already the low cost producer in Slavutych. I like very much the American technology of covering concrete floors with some special substance because in our city we have a lot of official buildings with concrete floors which are not covered and which have a very short service life. As a result we need to perform continuous maintenance with chemicals to protect the floor from damage.

My dream is to create grassy areas and lawns and beautiful pathways near our roads. Currently we service about 10% if all the residential areas in the town of Slavutich and we would like to create something which looks pretty, much like here in the U.S., but I am afraid we don't have enough money. Our mayor is interested in beautifying the town, but he also doesn't have much money. On our return I will have a conversation with him.

I think that first we need to start with the production of construction materials, not construction components because we don't have sufficient materials for them. For materials such as OSB we should be able to find customers because it has such a wide area of application and it can be sold almost anywhere.

I cannot speak to others about all the technologies and all the issues I have seen here, but I am sure that I will accomplish such things as these grass lawns, and also the covering technology for concrete floors. Also, I want to go into OSB production and would also like to learn to make attractive sidewalks. So at least I hope to be able to persuade people that they really need such good sidewalks. I think I will be able to implement not more than 10% of all the information that I learned here.

I want very much for this study tour program to continue for Slavutich companies. They badly need to reorganize the whole system of services provided in the residential areas. We have a large amount of work to do. This includes companies who supply small furnaces for heating houses because currently Slavutich has just one huge central heating unit and if it broke down the whole town would be without heat. The sewage filtering facilities also need to be reorganized. We need to make the city more beautiful and to repair the roads and highways. We need people to work on the exterior design of the town. We need to create something that will make Slavutich different from all other towns and cities. I am just thinking about what is most interesting for me. Currently in Ukraine we have a law which allows the building of condominiums like in the United States. It provides for an organization made up of all the apartment owners. It issues instructions and it shows designs. It is much different from American condominiums, but this process has already been started. The most important constraint is that we have different legislators.

### **Case 11: Valentyn Melnyk, Director, YUTEM**

#### Company profile

The company was established in October 1999 and in 2001 employs 43.

Company products include: metalwork; steam systems, hot water and natural gas pipelines; non-standard equipment; assembly and civil engineering work.

#### Valentyn Melnyk presentation

I was impressed greatly with the American method of scheduling the construction process. From the technological point of view I cannot say that I saw anything totally new, unseen, and unique, but the way construction is organized is really impressive.

The main difference is between the way the construction process is organized in Ukraine and the U.S. In Ukraine, before construction companies have actually done the initial work and actually produced anything, there is always involved a government agency called the “Department of Capital Construction” which doesn’t do much of anything. [CEI note: This study tour included members of this Department of Capital Construction.] It just sits there and money goes through this organization, but they don’t do anything useful; they are just there. This is the Ukrainian system. This organization controls the construction processes and monitors how the whole process is going on. But the staff are on a fixed salary and they are not very deeply in their heart and soul interested in the project and in minimizing the cost of construction. It is a state run organization. You don’t have the same stimulus as the people who are actually doing the job. For example, in the case of Slavutich, almost every construction project requires approval of the Chernobyl Nuclear Power Plant. And as part of this nuclear power plant, since it’s a state owned property, this “Department of Capital Construction” is involved. By capital they mean general construction, like big projects. So again the work acceptance and the payment for the work that we have already completed, goes through this department. The only authority that can actually influence them or encourage their work, so that they will do their job better, the only man who can actually come and tell them that they need to do better something is the head of the power plant itself. But he cannot do anything except just talk to them. This Department of Capital Construction in Ukraine is responsible for customer relations, and they are the main customer. In contrast, in the United States both the contractor and the subcontractor are as interested as the owner in speeding up the process. This includes both doing the job and paying the money for it. The situation in Ukraine is quite different.

Of course, when I was working for a private company, that private company is the customer. First of all, private firms would never allow themselves to operate through such a Department of Capital Construction and second of all, I, as the general contractor, would definitely be interested in speeding up the construction process because my money is involved. You can say the same if a customer is a state owned company. Moreover we have a lot of international projects right now and most of their firms refuse to work for such an entity our state owned Department of Capital Construction. They don’t want to deal with them. The head of the Department of Capital Construction, tries to make these firms work through them but they just refuse to do it. If we did not have this Department of Capital Construction there would be a 60% increase in productivity.

Thus, one of the most important things I learned from this tour was the need to eliminate the Department of Capital Construction.

I have already won the bidding process on a project involving the construction of a plant for processing liquid nuclear waste. I will implement the American approach to this construction and to the relationships between customers, contractors and subcontractors as soon as I get back home. This project is funded at \$1.5 million and it is a very complicated project from a technological point of view. The client who ordered this project, the European Bank of Reconstruction and Development (EBRD), has chosen a procedure which is not typical for Ukraine. They will first sign the contract for construction work and only after that will they contract to start that part of the project concerned with mounting electrical parts, mechanical parts, and specialized parts. The main thing that we fear right now is that there will be certain discrepancies between these two contracts and the drawings and the actual work will differ since the contracts were signed at different times.

Since the European Bank of Reconstruction and Development is the main source of funds, it will establish a consortium which will include three companies from Italy, Belgium and France,

and they will be responsible for all equipment purchases. Technical equipment was 99% ordered in Ukraine because they wanted to reduce costs and this includes all materials such as piping, cabling and pumps and small size equipment. They are my responsibility to buy. The equipment will belong to my company after the project is complete, but I will be using them in production on this project. In this project there is no state agency involved. The only exception will be the technical inspection after the construction is done by us. Of course, the acceptance and inspections on projects are a state priority, but for the rest of the project there is no state involvement. Even if it is a private project the state sends its inspectors anyway.

### Dissemination

After I return home I will visit the corporate office of my company in Kiev. I have already agreed with the General Director that he will hold a conference dedicated to this study tour. The directors of the affiliate companies will be invited. The overall number of affiliate companies is 18 and these affiliates are located throughout Ukraine. I will tell them as much as possible about the experience and theories I received here in the U.S. Secondly, I am going to share the information and the knowledge with all the employees in my company directly. And since I am a member of the city council in Slavutich I will have a chance to organize a lot of meetings with the citizens, the societies of Slavutich, the people of Slavutich, and I will share my experience with them.

We are going to make a video. There was a suggestion to make even two videos. One will show the travel experiences on the tour. The second one will be dedicated to technological and scientific topics. We have both a city channel and a city network. That is why it's not going to be a problem to broadcast both of these videos to all the citizens of Slavutich.

Sometimes we cannot avoid working with the state Department of Capital Construction when they are the holder of the tender. There will be a big project for the second containment shelter for Unit #4. Unfortunately they are the main agency that distributes the tenders in our state organization. That is why it is impossible to work with them.

That is also why I have a dream that after I am done with this project of building the plant for liquid waste processing I plan to set up my own company to produce boilers and different supporting equipment. I will be using the American way - the one with American organization and quality. Because we know that in the very near future there will be a great demand for new boilers and supporting equipment. If I manage to somehow have as a partner an American company we would definitely make a large profit. I know Ukraine market; I know the situation in this market. That is what we have been doing all our life, mounting technical equipment, assembling technical equipment; that's our job. Our company in Kiev builds most of the large electric power plants in Ukraine. A couple of days ago my corporation celebrated its 75th anniversary. That's why we have so much good experience. Unfortunately right now we don't have enough work, but we are waiting for the big projects to come.

I took notes on everything, investment, technology, finances, and organization in my log book. There are areas in the specialized economic zone of Slavutich where you can get certain kinds of benefits by utilizing productivity improvements such as I saw in the U.S.

### **Case 12: Vyacheslav Vaniyants, Director General, Atma - Stroy**

#### Company profile

The number of employees in 2001 was 70.

Atma – Stroy CJSC was established in April 1994 to carry out general construction work and reconstruction of premises. Among some of the largest projects were the construction of the Slavutich Art School and the total reconstruction of the Slavutich International Radio-Ecological Laboratory.

The enterprise has state certificates for conducting all types of construction activities. The staff of the decorative works section is a group of highly professional specialists who are skilled in modern techniques. Decorative materials made by world leading companies are used (Knauf, Tikkorilla, Rigips, etc.).

In addition to our construction work, “Atma – Stroy” CJSC also produces monuments, slag bricks, tombstones, flowerbeds, benches and urns.

Company goals include:

- To construct new buildings meeting international standards.
- To increase production.
- To introduce new technologies in our production processes.
- To improve the professional level of the staff.
- To improve the well-being of the staff.

### Vyacheslav Vaniyants presentation

The longer I stay in the United States, the more I am impressed. What had the greatest impact on me was how management is organized in the United States. I will mention two types of management. The first is the management of construction business and all the things which it includes. The other is life in the United States as a whole. The second impressed me most of all. I was very impressed indeed.

Regarding the management of construction, I was most impressed by the organization of labor. I was also impressed by the culture of production. The culture of production appears to mean first that the construction site begins with the installation of a toilet for the workers. Another step is to construct an easy approach to all parts of the construction site. I also didn't see any waste at the construction site. I didn't see any idle people.

The issue of culture of this differing production can be seen best in comparison - when comparing the United States production methods and Ukrainian production methods.

We have been involved in the construction business for eight years. In Slavutich the construction business is rather difficult as it is in Ukraine as a whole. Someone gave an example of a Kharkiv company which reorganized all their work methods; I do the same very often. Currently the average age of my employees is 10 years younger than it was several years ago. So that's why I am not going to change my personnel right now. But after I saw everything here I was aware that without new technically advanced construction materials, without advanced technologies, no further development is possible.

When I was in Austria I took some funds from my working capital and purchased some new equipment for finishing work. This new equipment requires new highly advanced construction materials which are expensive in our country. But it allowed us to shorten the length of construction time. It yields higher quality construction, but the production costs are much higher. And given the fact that my business usually is based on governmental orders, I have had only one chance to use this advanced Austrian equipment and then it was when we were erecting a building for the municipal authorities. In this case, I tried to equip myself for this project at my own expense. I also spent a rather large amount of money for personal training to operate this equipment. You showed us the construction material used at several sites, so I am familiar with such things. But it's really difficult to apply them in Slavutich. As for orders from private

customers, the United States and Ukraine cannot be compared. In Slavutich, orders from private customers are very small. Under current circumstances I am forced to work on just state orders. In this way I have been surviving for eight years. For the last eight years I have been working in the public construction business although I have been in the construction field for 30 years.

We can only dream of management systems which you have in the United States. During the meetings which we have in Slavutich among the different managers of construction companies I have been raising the issue of the need to rationalize relations between business firms. We have also considered administrative centralization. For example, in Cincinnati you have associations which help and coordinate private businesses. During this process, small companies do not compete much with each other. In Slavutich we need badly to create such an association. Three years ago I had a plan to create an association but nothing was accomplished.

That is why I am emphasizing the need of an association because currently in Slavutich we have a lot of small companies isolated from each other and many of them can be just lost. If we had one strong association it would be much easier to lobby our interests and to organize our sales work in Slavutich. But success also depends on the intelligence of the businessmen.

It's rather difficult for a small company to conduct marketing because a marketing person should also be a very good engineering specialist. That's why I need right now to take our type of marketing person and to show him all the new materials, to show him the advantage of each of the materials. That is a rather complicated process.

### Dissemination

I need some time to think over the approach to dissemination. It will be difficult just to disseminate information based on my learning experience and to have a large impact on construction methods in Ukraine. First of all I think we need to change our peoples' minds. People surrounding me are about my age and they already have their own opinions and it is very difficult to change current practices.

### **Case 13: Fedir Kravchenko, Director General, Chernobylatomenergobud**

#### Company profile

The company was founded in 1999 and employs 72.

Chernobylatomenergobud Association conducts the following types of activities:

- Assembly and civil engineering work both industrial and residential.
- Production of construction materials.
- Repair and construction services for the general population.
- Transportation services.

The enterprise conducts its activities in Slavutich and the Chernobyl 30-kilometer zone. The main goal of the company is design, assembly and construction work in order to implement projects and programs connected with elimination of the Chernobyl accident's consequences.

#### Fedir Kravchenko presentation

I have obtained a lot of new information relating to construction organization, the different construction technologies, and construction materials and supplies. As for the direct implementation of them in Ukraine, I cannot anticipate right now where and how I am going to do it because you can't do it right away; you have to analyze it first.

On the grounds of my company, I have a very large portion of land with a lot of structures and different buildings. There is also a railroad siding. I will soon, hopefully have my ideas more

or less organized and I will know what I would like to do. I would like to use this land for establishing some type of production facility. Possibly it could be the construction of homes such as we have seen at American Homes. But I need time to study the distribution market before I can tell if this is the type of production I want to establish on this land.

The firm I liked most on the tour was Marvin Windows. In my company I also have 10 or 12 wood processing machines. But, of course we don't have technology such as we saw at Marvin Windows.

I am considering making prefabricated homes. I already have a plant which is not very big, but it has a sufficient capacity to produce the building foam insulation, not the Styrofoam which is standard, just the B board which will be used for the walls and for insulation. In addition, we also have a company that is producing dry wall. We already have some production stages in process.

We have totally different situations from the ones you have here. You try to get people to come back to the city. Our so-called new Ukrainian generation right now prefers to go outside the city as you did some time ago, and they want to build houses in the countryside. That's why the production of prefab houses is in great demand. Every single home owner wants to privatize the land and tries to buy it from the state.

Actually, certain aspects of U.S. construction technology and construction process organization are already applied in my company. I think that from an economic point of view we will be able to increase the volume of our production. If I analyze and implement in my firm all the information that I have received here, the increase in my volume of production would be about 20% for next year. The main issues I am going to deal with are improving quality and reducing the time of construction.

Regarding the use of concrete in production, we are already doing this type of work and a lot of what I've seen is similar to what we do in Ukraine, but we are going to introduce some innovations after I get back home. Among them is the production of precast concrete blocks. That is a very interesting technology. What we don't have is the variety of hollow blocks which will permit preliminarily reinforcement with metal rods. We don't have that in Ukraine right now.

The tour will help my company expand in many different ways because my company does a lot of things, engineering, design, plumbing, electrical work, and finishing with a wide range of materials. We are clearly going to expand.

When we were visiting Dugan & Meyers we had a wonderful example where the welders showed us how to mount pipe lines using solder. This is something we don't do in Ukraine.

### Dissemination

It is difficult to say how many people I will talk to about the tour. I will distribute information first of all inside my company and then among the companies that are professionally dealing with us.

I am also going to contact 6 or 7 companies and I will try to have them establish a business relationship with me. In this manner the dissemination will extend to a lot of people. I will possibly try to arrange some joint production so that my company will be in charge.

Actually I have not thought about writing any articles although it might be helpful if I write about our plans to go into building prefabricated homes.

## **Case 14: Vadym Ivanovskyy, Director, Dioro Ltd.**

### Company profile

Number of employees in 2001: 30

Dioro Ltd. was established in 1995 to provide services in civil engineering, erection work, and construction repairs. Sanitary engineering work occupies 60 % of company's activities.

The company has the following premises: mechanical workshops (575 square meters), storage space for materials (390 square meters), an administrative building (2000 square meters), and garages (96 square meters).

Equipment includes: 3 trucks, 1 crane truck, 5 welding units, 3 lathes, 2 millers, 2 tool-grinding machines, 1 cutting machine, 1 pipe-bending machine, 4 oxygen cutters, 3 compressors, 3 gas generators.

### Vadym Ivanovskyy presentation

I will talk about some of the major innovations I saw in the U.S. and details which can be implemented in Slavutych right after my return. My expertise is in sewage systems, pumping systems, rest rooms and related applications. The first thing which surprised everyone in our group when we arrived was the operation of your toilet drainage seat seals. Everybody asked me why they worked in this way. In our country a toilet seal is raised under its own pressure. So here I saw that there is an additional second pressure actuated. And this means that the sewage system pipes must not be corroded or not have some waste on the inside walls. An example of this system is the small sinks which I intend to supply to our operation in Ukraine.

On this study tour we have members with different expertise and different specialties and we have already decided after our return to Slavutich to try and erect one building using all the technology and information gained here in the United States. All the U.S. companies who hosted our group gave us many booklets and much descriptive information. I think that with all this information it will help us to implement these new methods. We can also provide this information and these booklets to our customers so they can verify the results we can achieve.

Currently we use mostly European construction materials, but I think that their service life is not as long as American materials. I refer for example to the use of copper pipes. This material has almost unlimited length of service. Currently in our market, copper is a much more expensive material than the material provided to us by European suppliers. But within a short period of time I estimate that our clients will come to the conclusion that we need a material such as copper which has long length of service. While dealing with my customers I will try to persuade them that this technology approach is much better and more reliable. I will try to induce my customers to adopt this technology, to use this material, and obtain a longer service life to the benefit of our country and of Slavutich.

Our first visit after arriving here was to a laboratory that tests the quality of soldered joints. All of the operations at my firm are based on welding. We tend to waste a lot of time testing and checking welding joints. Here in the U.S. they just put one pipe into another one and they don't need to check this work. After I return home I will try to implement this method at my enterprise and I will try, for example, to weld together several copper pipes and then I will put a very high hydraulic pressure inside it. I just want to know the maximum pressure this pipe system can stand. And after that I am going to make my installations at specified lower pressures.

### Dissemination

The question is rather interesting because first of all, as a business man, I prefer to introduce the most modern technology at my enterprise only. But I will not be able to keep all this information a secret because while installing my work, other companies will see the results and will come up to me with questions, and I will need to answer these questions. I cannot name the

exact number of people I will talk to but I think that rather many people will be very interested in these new American technologies.

I am interested very much in establishing an association because there is a lot of new innovations all over the world and an association can assist us to bring this more quickly to Ukraine and to help us implement them.

### **Case 15: Mykola Linnik, Director General, Nerafa Ltd.**

#### Company profile

The company operates in ceramics production. Its main products are: fireplaces, small sculptures, monuments, small fountains for offices and apartments, and stained-glass panels. The enterprise also does interior design and repairs. The company produced sculptures, which were placed in front of the "Sarcophagus" Unit at the Chernobyl Nuclear Power Plant.

Nerafa Ltd. has everything needed for successful development: production facilities, a supply of raw materials, modern technology, highly-qualified specialists and an awareness of the market situation.

75 % of work is conducted in the summertime and 25 % in winter.

The company was founded in 1991 and has 11 employees.

#### Mykola Linnik presentation

The first and most important idea that I can take with me is the way all types of production are organized. The way it works in a proper order, one thing after another. And of course, I was very much impressed by the level of technical equipment used in all types of production. So even though, at the very beginning, I won't have a chance to start doing something to improve my company's organization, technology or equipment, I will definitely never be able to live and work like I did before because I have seen how everything is organized here. What I have seen here will help me better organize work-in-process and to improve quality.

My main goal when I was planning my visit to the U.S. was to learn improved technology related to the production of some types of artificial stone, because we need improvements a lot and my company has a great demand for this type of material. But unfortunately we don't yet have information on this improved type of production in Ukraine. I have already received some information and Jim Titus our Tour Director promised to get me the rest.

The program was very tight and we had a very hard working schedule. We managed to see so much in just three weeks. And of course the support for us was just superb.

When I get back I will review and closely analyze the technical information obtained in the U.S. I think I will consequently make some changes in work assignments between people who have different job positions in my plant and will change the relationships between departments. Another thing is that I will try to improve is our computerization and software usage. It will definitely help to improve the quality of our output. It will also improve the operation of our firm, both in terms of production facilities and the utilization of our warehouses.

I think, if you take all the information I have learned on the tour, I will be able to use 60 to 70% of the technology I saw. This is the amount that I will be able to implement. Other talented people in Slavutych will have to implement the other 30 to 40% in such areas as materials and other support activities.

I will be able to reduce my costs and increase my profits. This will take place in two areas. The first is by developing at my plant a special computer database because what I need is a

database of suppliers of raw materials. I also need information about my competition so I will know what position my firm occupies in my field in the current Ukrainian market.

The second thing I am going to do which will significantly decrease costs and increase the efficiency of production will be to reorganize the departments of my company and the work-in-process schedule. Since I saw how this was organized in the U.S., I will definitely review my entire system of production.

I realize that it is not going to be very easy for me because the way things work here in America in production in the construction industry in particular is affected by the whole way of life in the U.S., the whole social situation. So for us in a different country and in a different situation it is not going to be very easy. I realize we are going to have plenty of obstacles, but we have seen good examples so we know what we should do and how to do it.

I think my improvements will reduce my expenses by 10%. The reason I am able to give such a percentage, which is a high percentage to achieve within a short period of time, is because my firm manufactures small size masterpieces of art, such as little sculptures and little statuettes. My company is not organized as a continuous production process like a large construction company. We produce art and every piece of art is individual. So I am able to improve production to the extent expenses can be reduced by up to 10%.

One of the best visits, in my opinion, was the visit to the ceramic tile plant, Florida Tile. Since production there is similar to what I am doing, I obtained a lot of new information there.

### Dissemination

Among my friends and colleagues I have a lot of talented designers and architects who own their own small design groups and design companies. Even now, although they are very talented, they are envious because they have not been exposed to the ideas and new technology that I have in my suitcase right now. So in addition to the people I am already working with, we will organize meetings and I will share with them all this new information because it constitutes a serious new push towards a totally new direction in creativity.

In addition, as soon as our return to Slavutych, a special TV program will be organized and all the members of our group are going to take part in it. It is going to be a question and answer session. I can actually do it myself because the director of the TV channel in Slavutych is my best friend.

Another thing that was especially interesting was the trip to the University of Cincinnati and the offer made by the Dean of the Architecture Department to the whole group about a student exchange program. I know many people in our educational field and I know there is a possibility for this program. I am certain that such a can be organized and it will not take long if we contact the right people on both sides. Members in our tour group will contact the right people in Ukraine because we all exchanged business cards and the members in our group know staff at the universities in Chernihiv, Kiev, Kharkiv and others. Of course there will be negotiations between the two parties about program costs.

I think that since we had an estimate of five student exchanges at the beginning who may start this program, there is not going to be a problem with city authorities or the city council or even companies to finance these five students going to the U.S.

I was much impressed by the open heartiness, friendliness and warm attitude towards us from all the people that we have met here in the United States. There are no groomed women faces like we have in Ukraine.

The only thing I didn't see that I wanted to see was an art exhibition. I will definitely bring my exhibition to Cincinnati in the near future. I also want to go to the place where they sell

paints, brushes and art supplies. Of course it would be wonderful if there would be a chance for me to see a gallery with paintings by American artists.

### **Case 16: Oleksandr Zayats. Director, ADI Company**

#### Company profile

ADI Company was established in December 1990 to provide decorative interior and exterior design services. For several years now, the company has had an Art School as a subdivision. In 1995, the enterprise widened the scope of its activities.

Competition is rather high as there are more than 20 construction companies in Slavutich.

Current company employment is 23 and its activities are the following:

- Design of buildings and other facilities.
- Design and engineering of buildings' communications.
- Design of interiors and exteriors.
- Civil engineering and erection work.
- Security and fire alarm systems.
- Water supply systems.
- Heat supply systems.
- Sewerage systems.
- Production of furniture.
- Topography and geodetic work.

#### Oleksandr Zayats presentation

The study tour was organized in a very efficient way and I believe that I have seen 100%, maybe 99.9%, of what I planned to see and expected to see and learn before coming on this tour. I can state that if I would be given a task to develop such a tour I would not be able to do it.

Actually, most of the technologies we saw are already applied in Ukraine. However, this tour showed us a way to improve these applications. For example, I established my company in 1991 and it was operating in a different field earlier. In 1995 I totally converted my company to the field of construction and design and that I did according to American methodology, the American way. Initially I did not have relationships with customers, contractors, and maintenance workers. I went to the authorities and I got a license so that my company is now certified to do everything including general construction work, specialized construction work, and developing designs. In 1991 the Ukrainian privatization process started and a lot of companies that are now private in Ukraine were derived from former state owned companies. And consequently what happened was that they just continued doing what they had been doing before. If they had been building goods they just continued building them. If they were developing designs they continued developing only designs. But I wanted to join all this under one roof in my company including design, construction management, and all types of construction work so that my company would be able to do everything. Of course the volume of construction we have right now is probably not that big, but I can state that we are growing rapidly. The demand for companies such as mine in the Ukrainian market is very great.

There is in Slavutich, Kiev, and Kharkiv a construction boom right now. Everybody is building, including apartments and industrial structures. In Kharkiv you can go to any store where they sell construction materials for houses and apartments and you will be able to find needed supplies; there is always something new and good coming onto the market such as tile, hermetic solutions.

The most impressive thing that I learned in the U.S., and the thing I am going to implement, is a quality control system. I would like to implement it everywhere - at any type of production facility, and at any company. Our quality Ukrainian control system is based on totally different principles. The inspecting service of the inspecting company or an individual inspector from the very beginning feels himself superior to a person or to a company that he is actually inspecting. So what happens is that the company or individual being inspected feels himself dependent on the inspector. They actually forget about the purpose of the whole inspection process. So first of all I would like to implement a normal quality control system at every sector in my company. Of course, I have one in my company already, but what I learned here is that the American quality control systems looks a little bit like a metal structure; you know it's like a network. It penetrates the whole production process both vertically and horizontally so it's just everywhere.

Actually, talking about expenses, I don't really think that I will decrease them. I think they will increase. I think, however, that with the help of all the improvements that I am going to make in my company I will increase my production volume and as a result, my profits will increase as well. Within the next year I am planning to double my production volume. In comparison with the previous number of projects my company was working on, my production grew 2 to 2.5 times. It is still growing so I think that within the next year we can easily double it. Plus, I have more personnel employed right now and more future job recruitment possibilities. We have a data base of all the specialists that are needed by us who are working elsewhere in various types of construction. So I think that with this information we will be able to expand.

In our company we have 20 full time people. We also hire part-time contract workers and the number each month is not less than 30 - 30 people who get their salaries. Sometimes we may have 40 or 50 people, depending on the number of our projects. So if, for example, our company requires subcontractors, I usually just hire additional individuals because I have a license to do it. Of course the structures I am building are much smaller that what we have seen here - so I can do it. Other than that, except for some particular work, some specific work, we do everything ourselves including electricity, plumbing, sewage, etc. Learning quality control has been the biggest benefit of the tour.

I liked many of the construction technologies that I have seen in the U.S., but in my capacity at my company I don't see the possibility yet of using those technologies directly. Maybe some bigger companies may use them, but in mine I don't see it happening even though I liked them a lot. Materials, you can buy them, but to manufacture with advanced technology in Ukraine would be difficult.

### Dissemination

I will be able to disseminate the information I learned to the division and department heads in my company, all of them. The second stage is going to be passing the information on to my partners, people who also own companies and who are also in the same business as I am from Kiev, Chernihiv and other cities in Ukraine. I am also doing a little bit with publishing in some periodic issues such as newspapers. It's just a small local newspaper; the publication reaches about 5,000 readers. Maybe other newspapers won't take my information, but at least I have three newspapers who will publish my information.

In Ukraine we now have an architecture holiday. Actually, it is called the International Day of Architecture. It is celebrated on the first of July every year. I would like to officially invite you all to visit us on this holiday next year because next year this holiday is going to be held in Slavutich. During this holiday, all persons from Kiev and the Kievskaya Oblast will gather in

Slavutich. The total number of people will be about 100 to 150 architects and designers.

Out of all the video tapes the study tour members are filming we are going to make one complete film. In addition we would like to have a photo exhibition. Someone will give a talk about the study tour at the conference in July. In addition to that, since I graduated from the University in Belarus, I have a lot of strong connections with the architects in Belarus and I will give them the information as well. At least 5 people with whom I was studying in the University have the position of chief architect of different districts in the capital city of Minsk.