

# Economic profile of the IIHF ice rink prototype

## Chapter 4

### 4.1 Introduction

There are a lot of construction projects for new buildings of any use running all around the world continuously. The operation of these coming facilities is based on earlier experience of the investors. From this point of view, the decision-making is rather simple, even if the decision makers are not professionals in the construction business.

Ice rinks are special type of buildings and should be treated as such. Unfortunately, there are still plenty of new ice rinks and arenas being developed without the input of specialists. In these projects, there is the potential for major problems during the process of construction and operation. In order to have a proper cost and operation structure for a new ice rink project, the special features of an ice rink must be known, understood and taking care of.

A modern ice rink needs special tools to control the indoor climate, especially the temperature and humidity factors. These features are not comparable to common buildings. If one does not take these elements into into consideration they might cause remarkable problems in a very short time. This means within 2 to 3 years. Too high humidity of the indoor climate can easily cause serious corroding problems in steel structures and decay in wooden structures.

Saving costs in the wrong area will lead to serious damage in a short period of time. Even in a country like Finland, where some hundred ice rinks have been built in last thirty years, some

wood framed ice rinks have major decay damage only 4 years after the completion, due to ignoring the humidification issue in the mechanical plant.

The continuous increasing demand of the public is resulting in a higher requirement for the quality of the ice rink indoor climate. To have the temperature just above the ice surface on -4 degrees centigrade, but +18 degrees centigrade only a few meters behind the dasher board on the first seating row are common requirements in many ice rinks and arenas.

Technical solutions that are too simple can cause extremely high operational costs. Advanced technology can reduce energy consumption and operating costs by up to 50 per cent in existing and proposed arena facilities, while also improving the indoor climate for the customers.

Energy costs make it necessary to strive for energy efficiency. This element plays a key role in the decision to invest in a new ice rink. The later success with respect to the operational costs is made in the design phase. A clever design in combination, with the right technical features and skilled maintenance personnel will have a considerable effect on the level of operating costs.

The idea of this manual is to offer technical and financial guidelines for a "small", modern ice rink, which is not the most low-priced and simple facility. This prototype is a customer-based facility that gives operators and investors the opportunity to operate an economically successful facility, while providing the customer with high-level service and wide range of activities.

The IIHF prototype ice rink provides a palette of services for on ice and dry floor possibilities as mentioned in Chapter 2. Like in major multi-purpose arenas, it will be rather easy to change the ice surface quickly into a dry-floor facility.

### 4.2 Construction costs

The different structural solutions, materials and equipment for building services have a great impact on the construction costs. The IIHF working group has made the decision to design an **IIHF ice rink prototype**. The result of this decision is that the technical features are chosen, and also the structure, layout and volume of the facility. The technical features are described more detailed in chapters 3.3, 3.4 and 3.5 of this manual.



*Public skating and equipment rental are good ways to boost your income.*

**IIHF prototype ice rink**  
**Lemminkäinen Construction Ltd.**  
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Cost groups according to DIN 276	Preliminary cost estimate	%
<b>100 Site costs</b>		
<b>200 Utilities</b>		
<b>300 Construction costs</b>	<b>1,341,097</b>	<b>57.84</b>
310 Earth works	123,855	
320 Foundation (incl. ice pad)	265,825	
330 External walls	118,220	
340 Internal walls	138,240	
350 Ceilings	110,325	
360 Roofing	193,400	
370 Fittings	366,232	
390 Other construction works	25,000	
<b>400 Mechanical and electrical works</b>	<b>479,600</b>	<b>20.68</b>
410 Sewage, plumbing	79,200	
420 Heating	35,200	
430 Ventilation, Dehumidification	118,800	
440 Electricity, high voltage	110,000	
450 Telecommunication, data network, etc.	17,600	
460 Elevators	0	
470 Refrigeration unit	79,200	
480 Building automation	30,800	
490 Other M&E works	8,800	
<b>500 Site finishing</b>	<b>100,000</b>	<b>4.31</b>
510 Yard works	25,000	
520 Yard finishing	25,000	
530 External construction works	40,000	
540 External M&E works	10,000	
550 External fittings	0	
590 Other external works	0	
<b>600 Equipment</b>	<b>165,000</b>	<b>7.12</b>
610 Equipment (ice resurfacers, dasher board, score board etc.)	165,000	
<b>700 Design, project management</b>	<b>233,000</b>	<b>10.05</b>
710 Project supervisor	35,000	
720 Project preliminary costs	10,000	
730 Architect design and engineering	150,000	
740 Inspection fees etc.	8,000	
750 Art works	0	
760 Financing	0	
770 General project costs	25,000	
790 Other costs	5,000	
<b>Cost groups 100-700 total</b>	<b>€ 2,318,697</b>	<b>100.00</b>
<b>General project development costs (8%)</b>	<b>€ 197,089</b>	
<b>Total project costs (netto)</b>	<b>€ 2,515,786</b>	

Some special notes:

- 1) Cost structure finally depends on the operational construction realization (MC, CM, DMC...), calculation for location Munich, Germany
- 2) Cost groups 100 and 200 must be defined separately based on the site characteristics

This is a turn-key cost estimate for IIHF prototype ice rink. The IIHF working group would like to underline that this cost calculation is not a cost guarantee in any form. This calculation merely gives you as an investor, developer or sports enthusiast, a good indication of the total cost when you have decided to build a small ice rink.

Between continents and countries the construction costs are going to vary, even when we use the same technical definitions. The cost estimate shown in the manual is based on the location in the city of Munich, Germany.

Please be aware that lower labour costs in some countries in comparison with the cost level in Germany automatically lead to notable savings. In many cases the lower labour cost level is balanced by paying extra on import taxes of technical equipment or by the increasing number of employees because of the lack of machines.

The model of the cost calculation is based on the German DIN 276 – form, which is widely been used in Central Europe. On the other hand it is rather easy to transform this cost estimate into another calculation form.

The costs of the site and the utilities are not included in the total summary. These are also the items of the costs in order to have neutrality in the cost estimate.

### 4.3 Operational budget

#### 4.3.1 Expenses

The major **utilities** required in an ice rink operation are electricity, gas, and water. Also monthly fees related to the external financing (see chapter 5), mortgage payments, should be looked at on a case-by-case basis.

Maintaining a sheet of ice is a 24-hour commitment. The owners cannot simply turn off the electricity to the refrigeration plant when the building is closed. There are proven methods to efficiently operate an ice rink.

It is also important to work with the local utility companies to establish favourable agreements for the facility. A common way to reduce the fixed costs is to negotiate partner agreements with a local telephone company or a local garbage disposal company or other similar companies.

When making the budget for the operational costs one should take into consideration the tasks that could be fulfilled by volunteers. This possibility would improve cost reduction. The tasks could be:

- Maintenance of the facility
- Cleaning
- Ice resurfacers maintenance

Also **mechanical service contracts have to be included**. Specialised work that has to be done by experts, which could include maintenance of the refrigeration plant and the ice resurfacers.

#### List of monthly expenses

- ✓ Financing costs
- ✓ Utilities – electricity
- ✓ Utilities – gas
- ✓ Utilities – water, sewer
- ✓ Insurance - Liability and Property
- ✓ Real estate taxes
- ✓ Other taxes licenses and fees
- ✓ Telephone
- ✓ Office expenses
- ✓ Cleaning supplies
- ✓ Trash removal
- ✓ Facility maintenance
- ✓ Personnel costs

#### Personnel

All ice facilities require a competent, well-trained staff to help the rink succeed. As previously noted, the cost to open an ice facility is substantial. It is important to have a staff that understands the ice business and can operate the facility at maximum efficiency and profitability. Due to the fact that a single sheet facility may operate for 18 hours a day, 7 days a week, the facility will need related man-hours to cover the operation.

In some countries, it is possible to utilize volunteer staff to cover many of the hours. However one should be aware that volunteer work ethics and expertise might be lacking. For a successful operation, the total number of staff can be adjusted. With larger public sessions or special events, a bigger staff will be necessary.

The **rink manager** is the key to a successful operation. The manager must oversee the whole spectrum of activities and services and should operate a customer-based operation. The

rink manager should be the driving force behind the facility.

The duties of the manager in a single sheet operation include, but are not limited to, the following areas:

- ✓ Personnel Administration
- ✓ Human Resource Management
- ✓ Ice Scheduling
- ✓ Ice Contracts
- ✓ Marketing
- ✓ Facility Maintenance
- ✓ Budgeting

It is necessary to have at least **two assistant rink managers (rink technicians)**. The assistant rink managers typically take care of the evenings and weekends at the facility. It is their responsibility to schedule part time staff, maintain the facility, and serve as the main customer service person for the public. They are also responsible for ice maintenance and resurfacing the ice.

A facility should also have one full time, multitalented **secretary**. The secretary fills a variety of roles, including receptionist, registrar, and accountant. This person must also have knowledge of all the programs offered at the rink, to immediately answer questions from the general public.

In addition to this staff, a single sheet facility may have 2 to 3 additional **part time operations staff** that can drive the ice resurfacer, work evening or weekend shifts, maintain the building and keep it clean.

As the ice rink industry evolves and changes, it is important to keep staff up to date on the latest advancements in the industry. With a plan for **staff training and education**, rink operators will have the opportunity to learn more efficient and cost effective methods to running an ice rink. A budget should be created to cover training course registrations and expenses.

In many areas of the world, the user groups such as the hockey or figure skating clubs will take responsibility for the programs on the ice. In other parts of the world, depending on the type of rink operation and the region, there are several other positions that may be added to the full time staff. A **skating director** would handle all Learn to Skate and figure skating programs in the facility. This person would serve, as a teaching professional in the Learn to Skate program, would hire

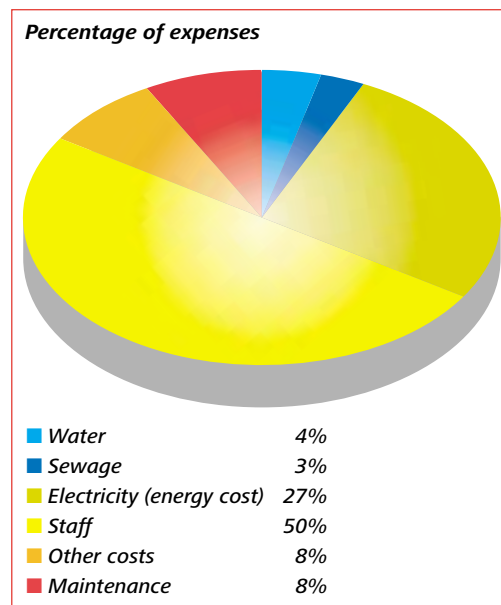
other skating coaches, and coordinate all skating programs. A **hockey director** would operate in a similar manner to manage the hockey operations at the facility. If necessary, a **marketing director** may be hired to promote the facility and the many diverse programs that are offered to the community.

If the rink expands to include a concession stand or a pro shop, both a **concession manager** and a **pro shop manager** would be required.

#### Personnel list

- ✓ Rink Manager
- ✓ Technical Staff (2)
- ✓ Office Secretary
- ✓ Part-time operations staff (2-3)
- ✓ Part time maintenance staff

It is also to be noticed, that an ice rink with two ice pads can be operated with the same amount of staff as the single ice surface rinks. Other expenses, such as energy, can be reduced in comparison with the doubled user capacity of the facility.



For an ice rink like the IIHF prototype, an average annual level of expenses in 2001 in Europe is between 300,000 € and 400,000 €.

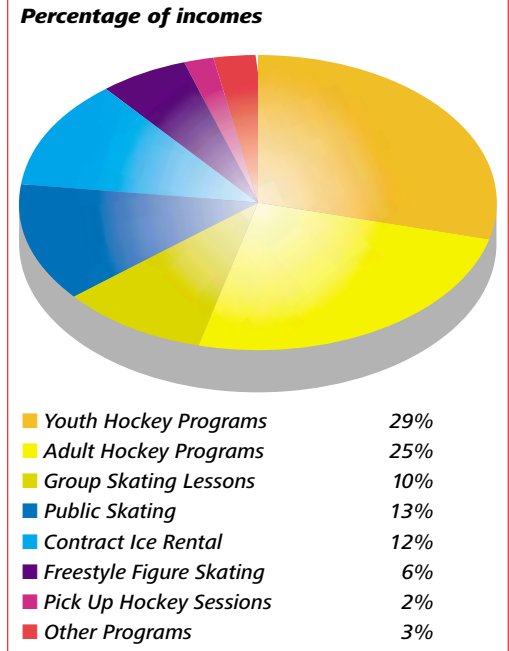
### 4.3.2 Income

In order to operate successfully, ice rink facilities must offer activities and programs for everyone in the community. The more potential users the facility has, the greater the chances of success for the facility. There are many programming ideas that help rinks to prosper, but actual income may vary greatly due to the local community, area or environment.

Another key to success is to offer programming that will allow your customers to stay with your facility for a lifetime. A lifetime customer would enter your facility as someone interested in skating, start in learn to skate lessons, decide to concentrate on hockey or figure skating, compete as youth participants in their chosen sport, then remain with your facility in adult recreational hockey or figure skating programs.

#### Income categories

- ✓ Youth Hockey Programs
- ✓ Adult Hockey Programs
- ✓ Group Skating Lessons
- ✓ Public Skating
- ✓ Schools
- ✓ Contract Ice Rental
- ✓ Figure Skating
- ✓ Camps/Clinics
- ✓ Parties/Special Events
- ✓ Fairs, exhibitions
- ✓ Advertising



It is also important to schedule your ice usage for success. There are several “best practices” to be followed, and suggested time frames are noted with each programming option.

For an ice rink like IIHF prototype an average annual level of incomes in 2001 in Europe is between 250,000 € and 350,000 €. Naming rights, advertisements inside the ice rink and selling rights can also be a great source of additional incomes.