

## **Uppsala Livestock Research Centre**

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### **Introduction**

The Faculty of Veterinary Medicine and Animal Science (VH) is building new facilities for housing farm animals at Lövsta, seven km south-east of Uppsala. This area is of considerable interest in terms of natural history and cultural heritage. Here, the open agricultural landscape combines with pastures of varied topography, rich in deciduous trees, ideal for various forms of livestock grazing. Bordering the Linnaeus Hammarby estate, with its waymarked Linnaeus paths, this location was a meeting place for one of Sweden's most prominent scientists and his students and research colleagues in the 18th century. Adjacent to the new animal facilities lies the Lövsta estate, dating back to the 1700s. It takes about 20 minutes to travel between the Ultuna campus and Lövsta, about 30 minutes by car from Stockholm Arlanda Airport to Lövsta, and it is less than one hour by car to Stockholm city. Ultimately Lövsta will be provided with well-appointed facilities capable of accommodating up to 100 visitors.

In 2003 the Vice-Chancellor of the Swedish University of Agricultural Sciences (SLU) instructed the Dean of the VH faculty to examine the possibility of building new animal facilities at SLU in Uppsala to replace those that were more than 30 years old, worn out, and no longer fit for their purpose. However when it became clear that modernising them would not be economically viable the Vice-Chancellor and the Dean decided that Lövsta would be an ideal location for new, modern facilities for teaching and research on livestock: cattle, pigs and poultry. Program development began in 2006, and in October 2008 the University Board decided that the Vice-Chancellor should assume responsibility for implementing the Lövsta construction project. The first turf was cut in August 2009 and animals will start to move in to new accommodation in September 2010, and the facility will be completed and fully operational by September 2011.

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The centre will be a modern facility for teaching and research on dairy cattle, pigs and poultry and all undergraduate and postgraduate students of the VH faculty will spend some time here during their studies. The VH faculty has an annual intake of over 200 students studying veterinary medicine and animal science as well as providing master's courses for international applicants. In addition the new research centre will offer fellow scientists from around the world, and including those in industry, a unique environment where it will be possible to undertake research of high quality with emphasis on animal welfare and animal health, climate-friendly animal management and sustainable food production. Animal production, feeding, behaviour, reproduction and health will be continuously monitored and recorded, and the data will be available to students and researchers. The faculty is also working with the management at the Lövsta facility on plans for a biogas unit and a slaughterhouse.

## **The dairy cattle barn**

The cattle barn is built as a loose housing system and will accommodate a closed herd of 300 dairy cows plus replacement animals for teaching and research. The herd will consist of animals of the Swedish Red Breed and the Swedish Holstein breed in equal proportions.

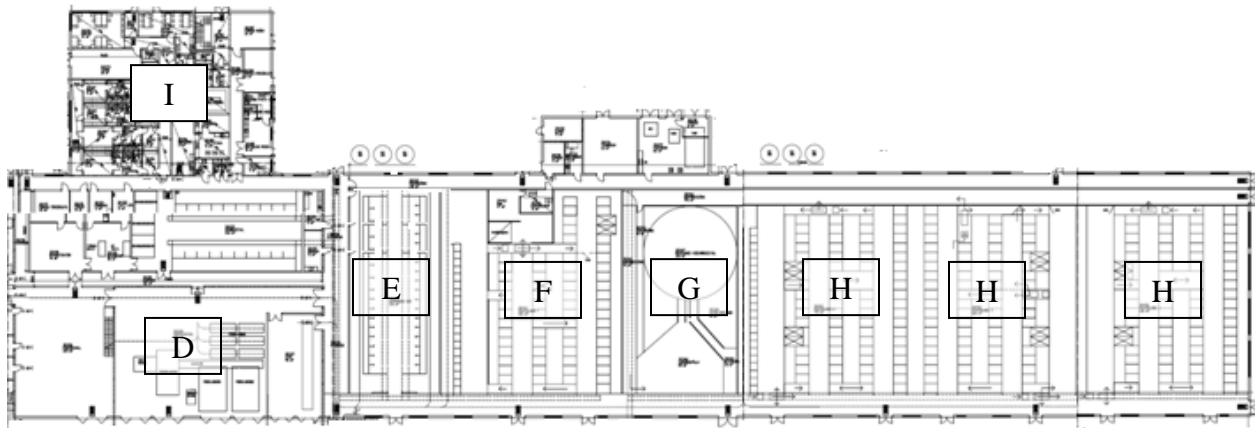
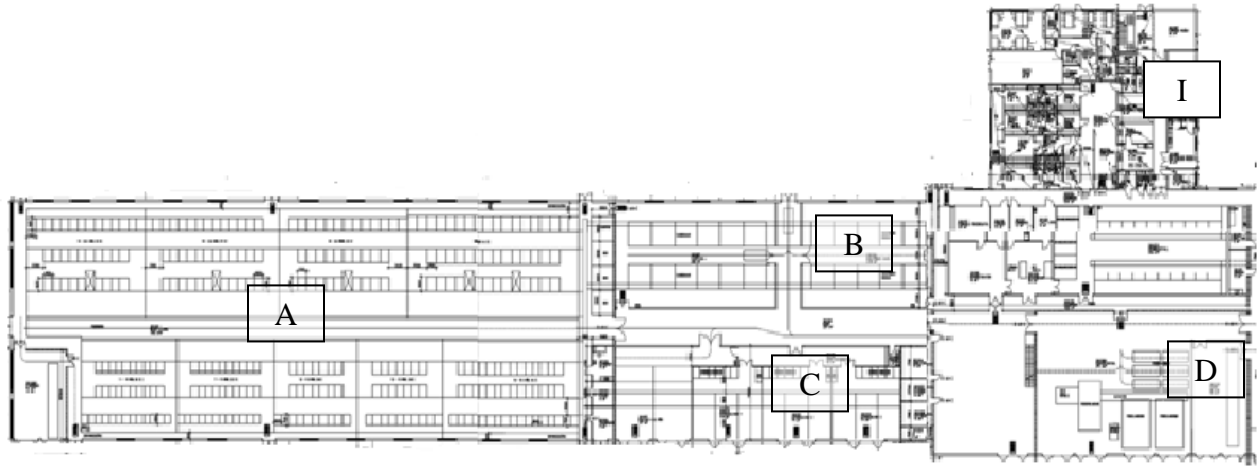
The lactating cows will be held in 4 groups of 60-65 cows respectively. One group will be in an automatic milking system (AMS) and three groups will be milked in an automated rotary system. In the AMS-group and in one of the rotary groups there will be concentrate stations as well as roughage stations which make it possible for automatic registration of individual total feed consumption. In the other two rotary groups the concentrate will be distributed in stations and roughage on an ordinary feeding table. There will also be a separate area where heifers or lactating cows can be restrained for short periods to enable both intensive studies and teaching. In this area the feed will be distributed by registering feed wagons. In all three housing systems the milk yield and some milk quality parameters will be registered automatically at every milking.

Calving, planned to occur evenly throughout the year, will take place in a dedicated section. The calves will be housed in separate sections on litter beds in groups of 10 calves and fed by an automatic milk feeder up to weaning. During the period from 4 months to 6 months of age the heifers will be held in groups of 20 calves on litter beds and the bull calves will be sold to farmers in the region. From 7 months of age up to calving the heifers will be housed in age groups in the section for replacement heifers and dried off cows. Feed consumption will automatically be registered individually up to weaning (milk and concentrate), from weaning to 6 months of age and from insemination to calving (concentrate).

The main part of the roughage fed to the herd will be silage stored in bunker silos. From the feed central in the barn the silage can be mixed with concentrate as PMR or distributed directly to the cows and heifers by a belt feeder and/or feed wagons. Bedding material, mostly as cut straw, will be distributed automatically to the lactating cows and the replacement heifers. Adjacent to the cattle housing there will be pastures extending over 50 ha, including 20 ha of separate pens for grazing studies.

On the second floor of the barn there will be visitors areas from where you can look out over the lactating cows in the AMS-group and the rotary groups. In the other direction you can see the calves up to 6 months of age and the cows in the calving section of the barn. There will also be a hall where up to 100 persons can sit down and listen to presentations and lectures.

The cattle facilities will open in September 2011.



**Figure 1** The layout of the cattle barn:  
 Replacement heifers (A), calving (B) and calf (C) sections and feed central (D), tied-up cows (E), AMS (F), Rotary (G), rotary group (H), staff (I)