

The Two Shielded Rooms

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Before my retirement I worked for Bofors in Sweden, a corporation which manufactures military equipment. When computer terminals were introduced in the offices, several employees became electrosensitive. Computer Aided Design (CAD) also caused problems.

In 1990, two designers, Anita and Christer, became electrohypersensitive. We tried to modify their workplace so they could continue working there and not go on sick leave and never come back, as so many others have.

They were moved to an office on the top floor of the office building. The floor was covered with a layer of steel plates and a layer of aluminum plates, to create a shield against the offices below. All electrical equipment in the office was shielded and all these shields were connected to the metal floor. The metal floor was the grounding plane for the office. The earth itself was too far below the office.

This setup worked well for Anita and Christer. But the rest of their colleagues were in offices three stories below and it would be better if they all sat closer together. Then someone thought that it should be possible to build a shielded room on the same floor as their colleagues. The work could be done professionally by a firm specializing in shielding. It was not unusual for a company that produced military equipment to build a shielded room to prevent espionage.

I was a bit skeptical myself, as I had heard that some people who were electrically hypersensitive did not do well in shielded rooms. The first time I read about that was from Werner Hengstenberg in Bavaria, Germany. Hengstenberg was on a tear on these issues. With the help of technical friends, he developed measuring equipment, which he sold. He did not have an academic background, but he was electrically hypersensitive and he himself had tried to sit in a Faraday cage, with poor result. He naturally wondered what could be wrong with such shielded cages and he thought there was some sort of natural radiation which humans need to feel healthy, and it thus is wrong to shield off all radiation.

That explanation did not impress his fellow German, Eric-W. Fischer, who had a masters degree in engineering and taught courses about biologically compatible electrical designs. I attended one of his courses and heard Fischer state that it is fine to live in a Faraday cage. Another course participant took this message to heart and built himself a Faraday cage. The shielding was metallic netting — I recall it was netting for windows. Unfortunately, he did not sleep well inside, as he later told me in a letter.

So, there were some negative experiences with metallic shielding. Before we went through the expense of building a shielded room at Bofors, we therefore wanted to see if the most sensitive of the two designers could even be in such a Faraday cage.

We had a small Faraday cage we had earlier used for some experiments. It was now disassembled and in storage. We put it together and Anita sat in it for a few days. She reported that she did well there.

We did the test in another building, about 40 meters (120 ft) from where we intended to build the shielded room, but nobody thought the location was important. We just wanted to see if Anita did well in a Faraday cage, and she did.

The project could now move forward and the contract to build the shielded room went to a company in Helsingborg. The company put a disclaimer in the contract that they could not guarantee that someone with electrical hypersensitivity would do well inside. That was a bad omen.

It didn't work. The two designers did not do well inside the shielded room. They even preferred to sit right outside it, rather than inside. They gave up after a week and moved back to their old office on the top floor of the building.

The shielded room was built with copper mesh, which we knew did not block low-frequency magnetic radiation. We measured that to be about 50 to 75 nanotesla (0.5 to 0.75 milligauss), which were common levels in Swedish office buildings. What was not typical was that the dominant frequency was neither the 50 hertz power frequency, nor the 150 hertz harmonic, but 2.7 hertz. This ultra-low frequency came from a large electric oven two floors below, that was used to make ceramic electronic components. To what extent this unusual frequency was the cause of the problem was never investigated.

The walls of a metallic room exposed to a low-frequency magnetic field will have induced currents with many possible paths. This is not the only case where such

induced currents, circulating in closed loops, seem to have made people feel unwell. Such currents produce a magnetic field, but this field is normally weaker than the field that induced the currents, so there is no accepted explanation why Anita and Christer were so affected by this secondary field.

Anita and Christer gradually recovered, and after a few years they needed no special accommodations. It should be mentioned that Anita had the electrical wiring in her home replaced with shielded cables, which certainly contributed to her recovery.

Ragnar Forshufvud holds a masters degree in electrical engineering. He is now retired, but has retained an interest in EMF issues for people who are electrically sensitive and published the Swedish-language book *Bostad Och Hals*a (Home and Health) on this topic in 1998.

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