The role of different stakeholders in lighting retrofits - a lighting designers perspective

Or light and problem

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The Swedish Energy Agency's interest in lighting is based on the fact that we used an estimated 14 TWh of electricity on lighting and that lighting accounts for around 20-25% of a building's electricity consumption.

The lighting sector has carried out surveys that show that at least 50% of our lighting installations have a savings potential of more than 50%.

In Sweden over 120 000 persons are directly involved in the “light business”
Problems

Results concerning current problems can be summarized as follows:

- Lack of commitment, competence and knowledge among actors in different stages of the construction process.
Problems

- The focus on private gain overshadows ambitions to take a holistic perspective.
Problems

- Competence and knowledge may exist but are not used in the right way at the right time.
- Decisions are made with a too short time horizon.
- The construction process has characteristics that might make it difficult to learn from earlier projects.
- Control and follow-ups are often inadequate.
The proposals that are put forward concern three key areas — Competence, Incentives and Resources — and can be summarized as follows:

→ More resources should be allocated to early stages of a project.
→ Design should be made in closer cooperation between client, architect and technical consultants.
→ Long-term partnering-like relations should be established between the client and especially the architect/technical consultant. This also creates room for development of competence and knowledge on both sides.
→ The project should be carried out as a Design-Bid-Build project as the possibilities to control details of the project then are higher.
Examples of key actors in the process and their roles are:

- **Authorities:**
  laws, regulations, new standards.

- **The financial market:**
  provides capital

- **Building proprietors, property owners:**
  Rent out or sell space

- **Project managers:**
  the building proprietor’s project management, coordination of various actors

- **Users:**
  laying down requirements for the indoor environment/workplaces:

- **Architects and consultants:**
  advisers to building proprietors and users

- **Contractors:**
  carry through projected structures, procure materials etc.

- **Manufactures / sellers:**
  Develop new products, provides material to market

- **Research and education:**
Real Estate, lighting and contracts – one picture

Lighting Supply Field, Contracts

Owners, clients Purchasers

Wholesalers, Suppliers and Manufacturer of Components and Materials

Facility Management and Maintenance

Project Management

Contractors Developers

Architects, Lighting Designers, Technical Consultants

Leases

Consumers of light, Business

Installed Lighting and Managing system

Seller/Agents and Manufacturers of Luminaire, Lamps and Managing systems

Financing

Laws and Standards
Building Codes (PBL, BBR)
Euro Codes

Government
Workplaces (AFS etc.)

Laws and Standards for Products, Manufacturing
Personal Safety
Energy Efficiency, Eco Design
“Don't give too much opportunity to the electrical contractor to change luminaries.” There are diverse private economical interests in the construction process. The Moral Hazard problem.

“If we know which Tenants we are building for, it is important to have a dialog with them and discuss the rental contract to see if there are possibilities to do something about the split incentives regarding energy use.”

**Note:** That the standard is a minimum standard and it’s not taken into account all aspect of quality and human needs for light. It’s allowed doing better than the standard prescribes and it’s not necessarily less energy efficient to do so (use of daylight, better light design, LED etc).