Modern buildings are equipped with advanced Building Energy Monitoring System (BEMS) for energy supervision and management. To fully leverage the power of this system, a dynamic real time data analysis to understand the building operational strategiesis critical. Considering the significant volume of building energy data, a computer aided technique is necessary for any this kind of analysis. However, until now, there still lacks an effective method to automatically identify building operational strategies. In this paper, a new methodology targeting at identify multiple equipment coordinated control is proposed, which adopts Symbolic Aggregation AproXimation (SAX) as data pre-processor and performs a weighted association rule mining algorithm (WARM) to identify the coordinated control strategy. Case studies show that the proposed framework can effectively identify schedule based operational strategies and detect abnormal energy use behavior.